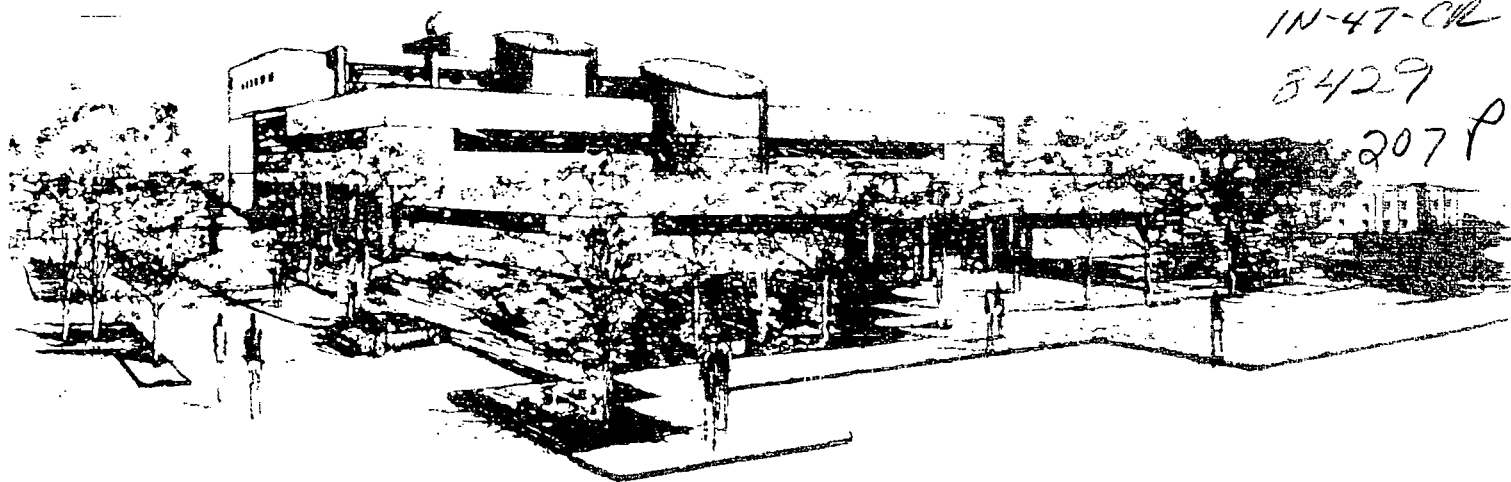




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DEPARTMENT OF ATMOSPHERIC SCIENCES
UNIVERSITY OF NORTH DAKOTA

University of North Dakota Citation

FIRE Cirrus II

Mission Summary and Data Report

(NASA-CR-195842) UNIVERSITY OF
NORTH DAKOTA CITATION FIRE CIRRUS 2
MISSION SUMMARY AND DATA REPORT
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University of North Dakota Citation

FIRE Cirrus II

Mission Summary and Data Report

University of North Dakota Citation

FIRE Cirrus II

Mission Summary and Data Report

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UND Citation FIRE Cirrus II

Mission Summary and Data Report

The following document represents a summary overview of the data collected by the University of North Dakota Citation research aircraft during the FIRE Cirrus IFO-II. The purpose of this report is to provide a quick-look summary of select parameters to FIRE investigators to assist in the use of this data set. The full data set resides in the FIRE archive. The data presented in this report should be considered preliminary and should not be used for reproduction.

The UND Citation was based in Coffeyville, KS, for the Cirrus IFO from 13 November to 7 December, 1991. During this period, ten airborne missions were conducted, including two night missions, for a total of 35 flight hours. These flights are summarized in Table 1. The primary objective of the Citation operations was to provide in situ observations of cirrus cloud microphysical properties. Nearly all of the sampling was done through step climbs and descents through cirrus layers. Each step has been identified as a data "leg" and data from 148 legs are presented in this report.

The instrumentation carried on board the aircraft for this program is listed in Table 2. Note that many of the meteorological parameters such as winds must be derived from the basic measurements. Table 3 gives a summary of instrument operation during the IFO. Two comments from this table require further explanation. The hygrometer experienced a persistent problem at temperatures colder than about -25°C and had to be re-balanced frequently during flight. Therefore, dew point temperature data are not available for all data legs. The other note concerns the ozone monitor, which was acquired shortly before the field deployment. Although this instrument was given an initial calibration, it was not accompanied by calibration equipment in the field and as a result, there may be some baseline drift in the data from flight-to-flight.

The data in this report are presented in three parts in order to help investigators locate times of interest. Part 1 consists of time vs. altitude plots and flight tracks in latitude/longitude coordinates, showing where the measurements were conducted relative to the Coffeyville and Parsons ground instrument sites. Although these figures are rather "busy", they give an idea of the overall mission profile. Part 2 gives a summary of each mission in terms of data leg times, aircraft altitude, and notes of interest gleaned from in-flight observations. Part 3 provides a summary of key parameters for each of the data legs flown. All times given in this report are UTC.

Table 1

FIRE Cirrus IFO-II
UND Citation Flight Summary

<u>Date (UTC)</u>	<u>Flight Times (UTC)</u>	<u>Comments</u>
11/14	1341-1740	Supercooled water
11/22-1	0050-0426	Small ice crystals
11/22-2	1803-2140	Supercooled water in wave
11/25	1350-1826	Deep deck of small ice particles
11/26	1629-1958	Deepening cirrus, contrail penetrations
11/28	1633-2118	High cirrus
11/30	1500-1715	High cirrus, all small particles. Off-hub
12/5-1	0612-0847	Two layers, lower quite dense. Good hub mission.
12/5-2	1756-2021	Cirrus profile, Coffeyville-Parsons
12/7	1922-2228	Cirrus band, coordinated with aircraft, satellite. Spectacular optical effects.

Table 2.

**University of North Dakota
Cessna Citation II Research Aircraft
Summary of Measurement Capabilities**

<u>State Parameters</u>	
Temperature	Rosemount Total Temperature Reverse Flow, Resistance
Dew Point Temperature	EG&G Cooled Mirror
Pressure	Rosemount
<u>Cloud Microphysics</u>	
Cloud Droplet Spectrum	PMS FSSP
Cloud Particles	PMS Optical Array 1D-C
Cloud Particles	PMS Optical Array 2D-C
Large Particles	PMS Optical Array 1D-P
Liquid Water Content	J-W
Supercooled LWC	Rosemount Icing Rate Meter
<u>Air Chemistry and Aerosols</u>	
O ₃	Scintrix Chemiluminescent
NO _x	Scintrix Chemiluminescent
CN Counter	TSI Alcohol Condensing
<u>Air Motion and Turbulence</u>	
Horizontal, Vertical Wind	Flow Angle Probe, Inertial Navigation System
Attack And Sideslip Angles, Airspeed	Flow Angle Probe, Differential Pressure Transducers
<u>Aircraft Parameters</u>	
Heading, Pitch, Roll, Ground Speed, Position, Vertical Acceleration	Litton LTN-76 Inertial Navigation System
Position	VOR/DME
Position, Ground Speed	GPS
Longitudinal and Lateral Acceleration	Schaevitz
Engine Fan Speed	Tach Generator
Cabin Pressure	Setra

Table 3

UND Citation Instrumentation Status

Date: 11/14/91
to 12/7/91

INSTRUMENT	OK	INOP	COMMENTS
Rosemount Temperature	X		
Reverse Flow Temperature	X		
Dew Point Temperature			use with caution
Static Pressure	X		
GPS	X		signal not valid: 11/28 and portions of 11/22, 12/5-1
VOR/DME	X		
INS	X		
Attack Angle	X		
Sideslip Angle	X		
Airspeed	X		
J-W Liquid Water	X		
Rosemount Icing Rate	X		
Condensation Nuclei	X	X	inop before 11/26
DRI Replicator	X		
PMS-FSSP	X		
PMS 1D-C	X		
PMS 2D-C	X	X	quit 11/26, inop 11/28
PMS 1D-P	X		occasional noise lowest channel
Ozone		11/22, 28 11/30	qualitative use only; not calibrated
NO ₂		11/14, 28 11/30	
Forward-looking video	X		
Data System	X		

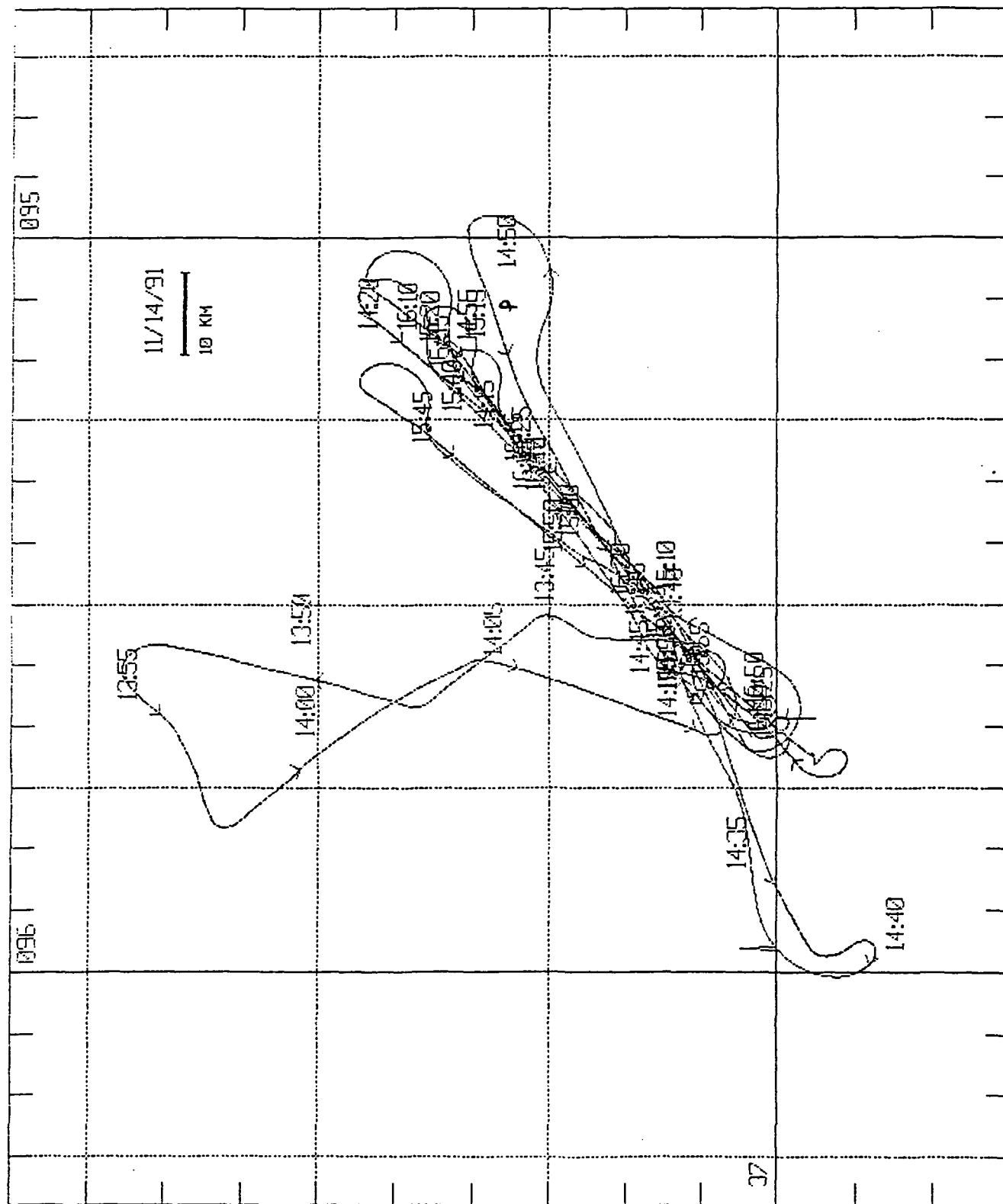
Part 1 - Position Summaries

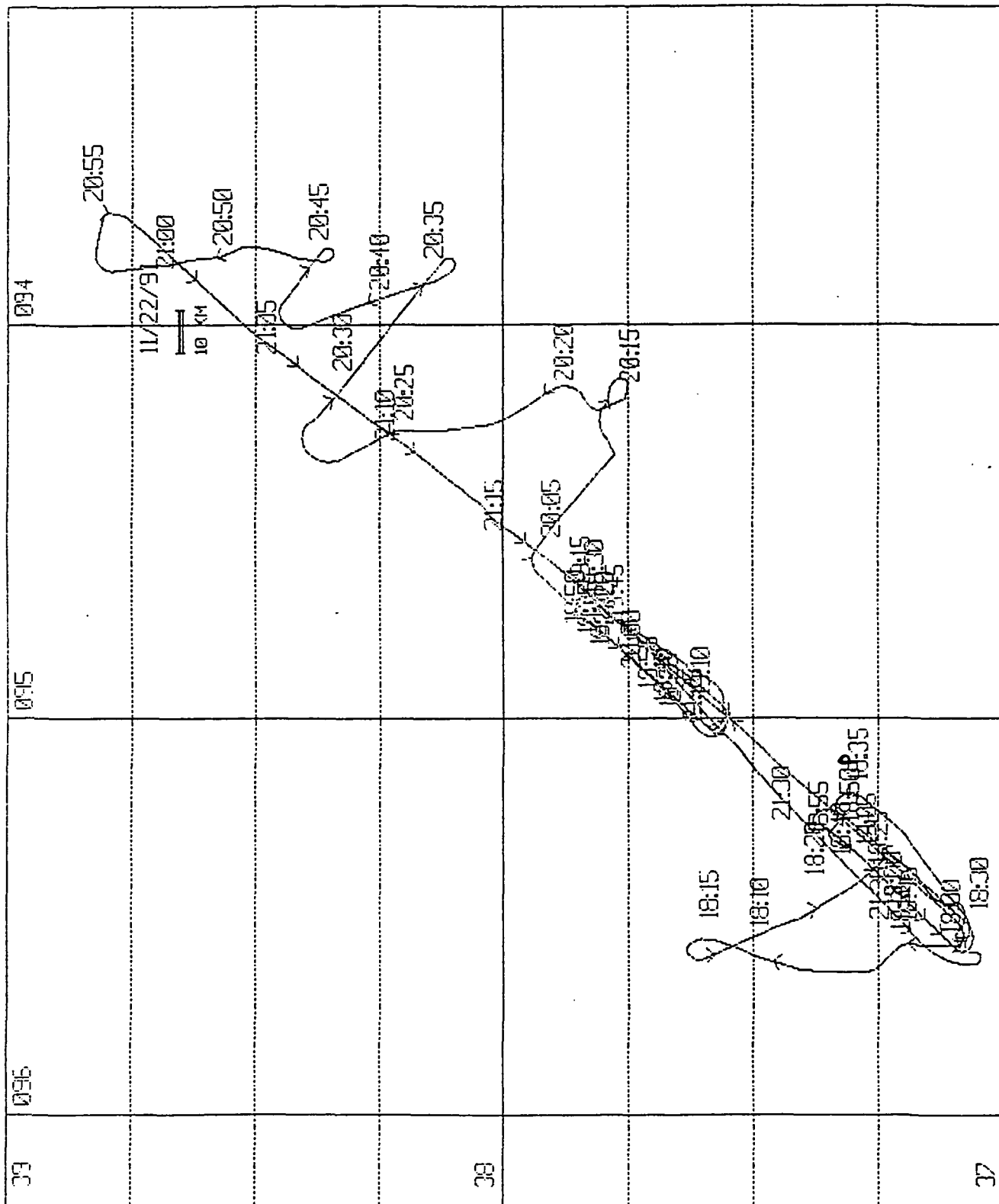
Flight Tracks

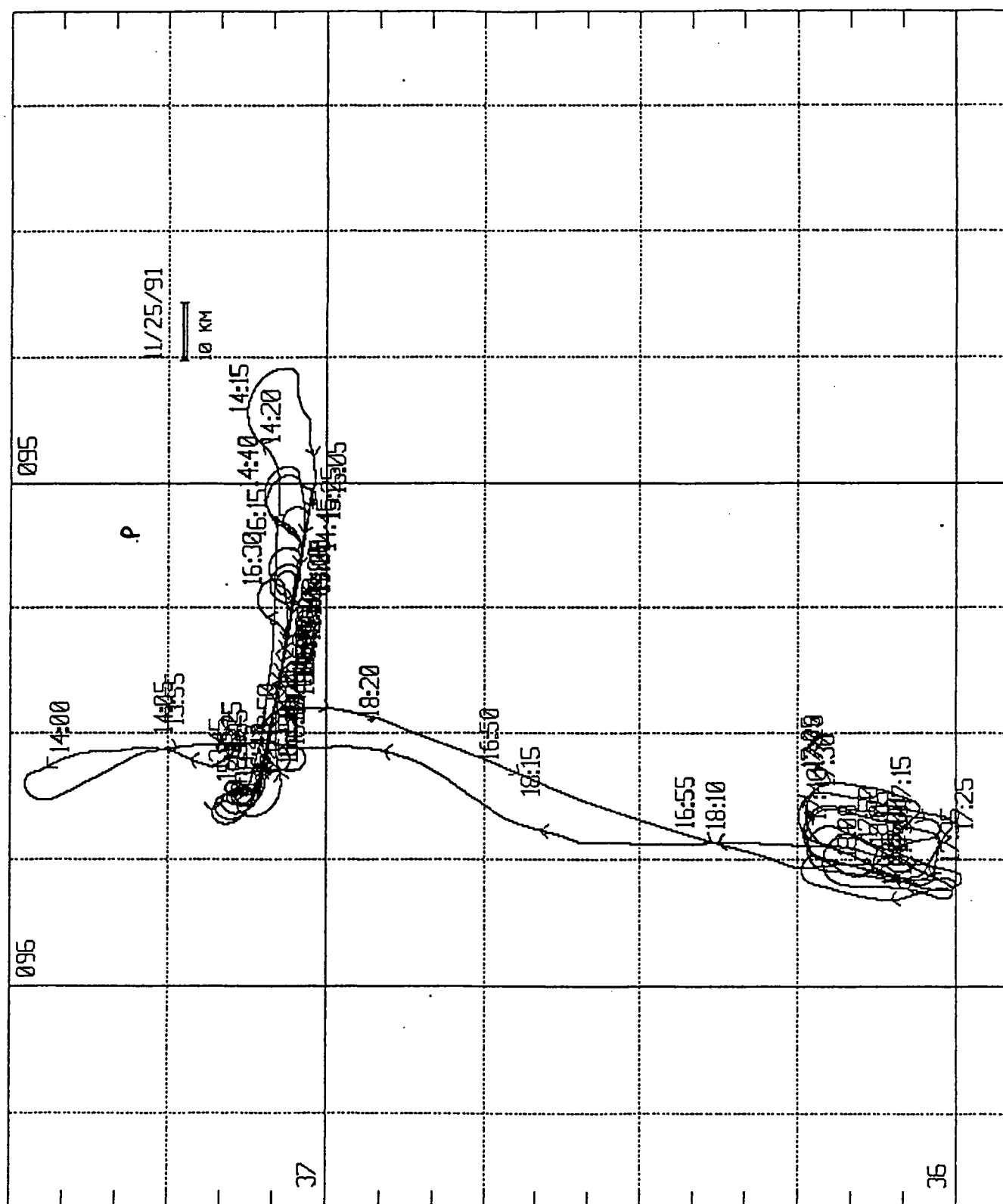
The flight tracks presented in this section were drawn using 1 second position data from the GPS or from the Inertial Navigation System (INS) when the GPS satellite system was not available. INS data were corrected for system drift using VOR/DME data. For reference, the FIRE Hub Site was located at N 37° 06.0' latitude, W 95° 34.7' longitude, and the secondary site at Parsons (denoted by a "P" on the plots) was at N 37° 18', W 95° 07'.

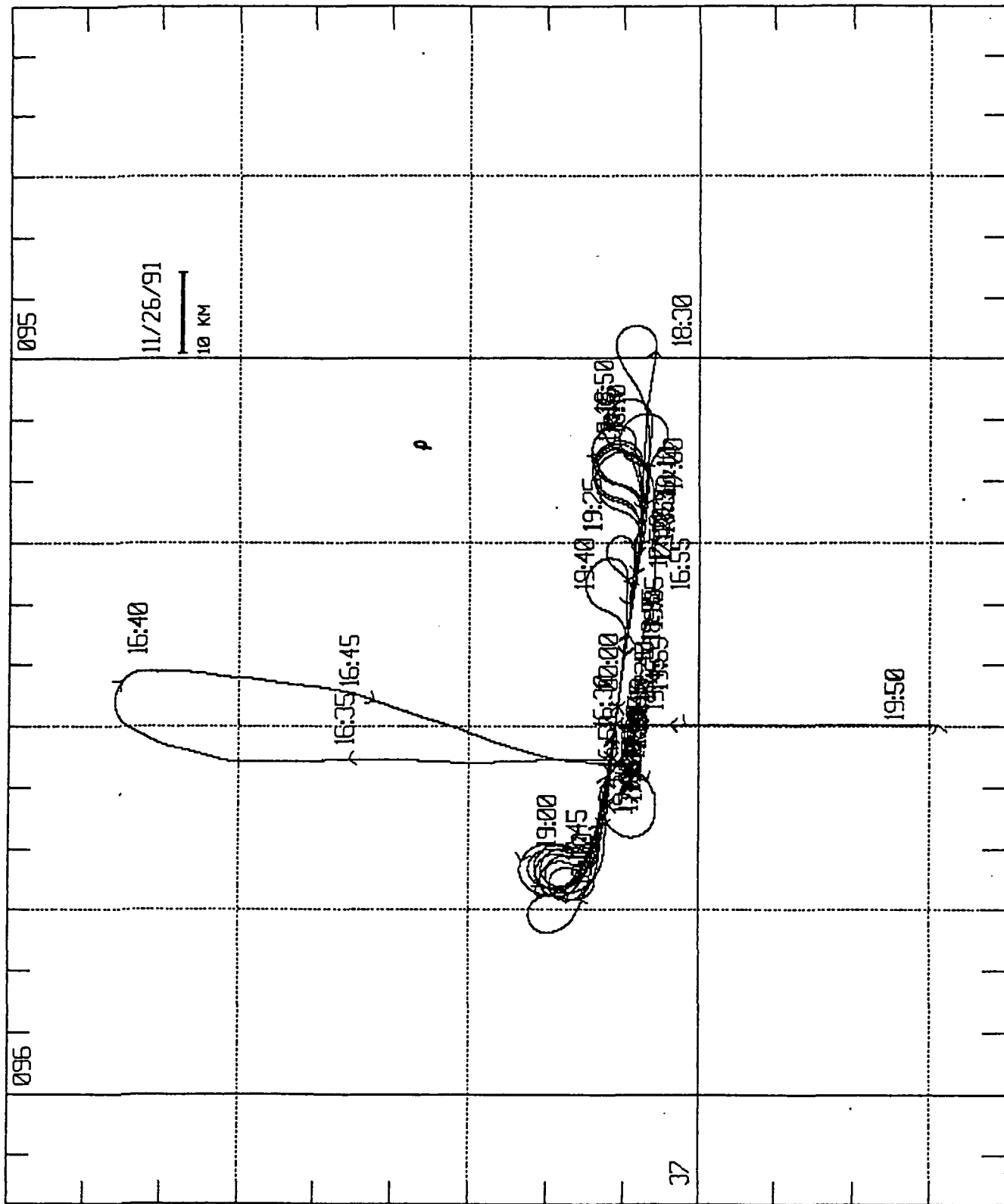
Time-Altitude Plots

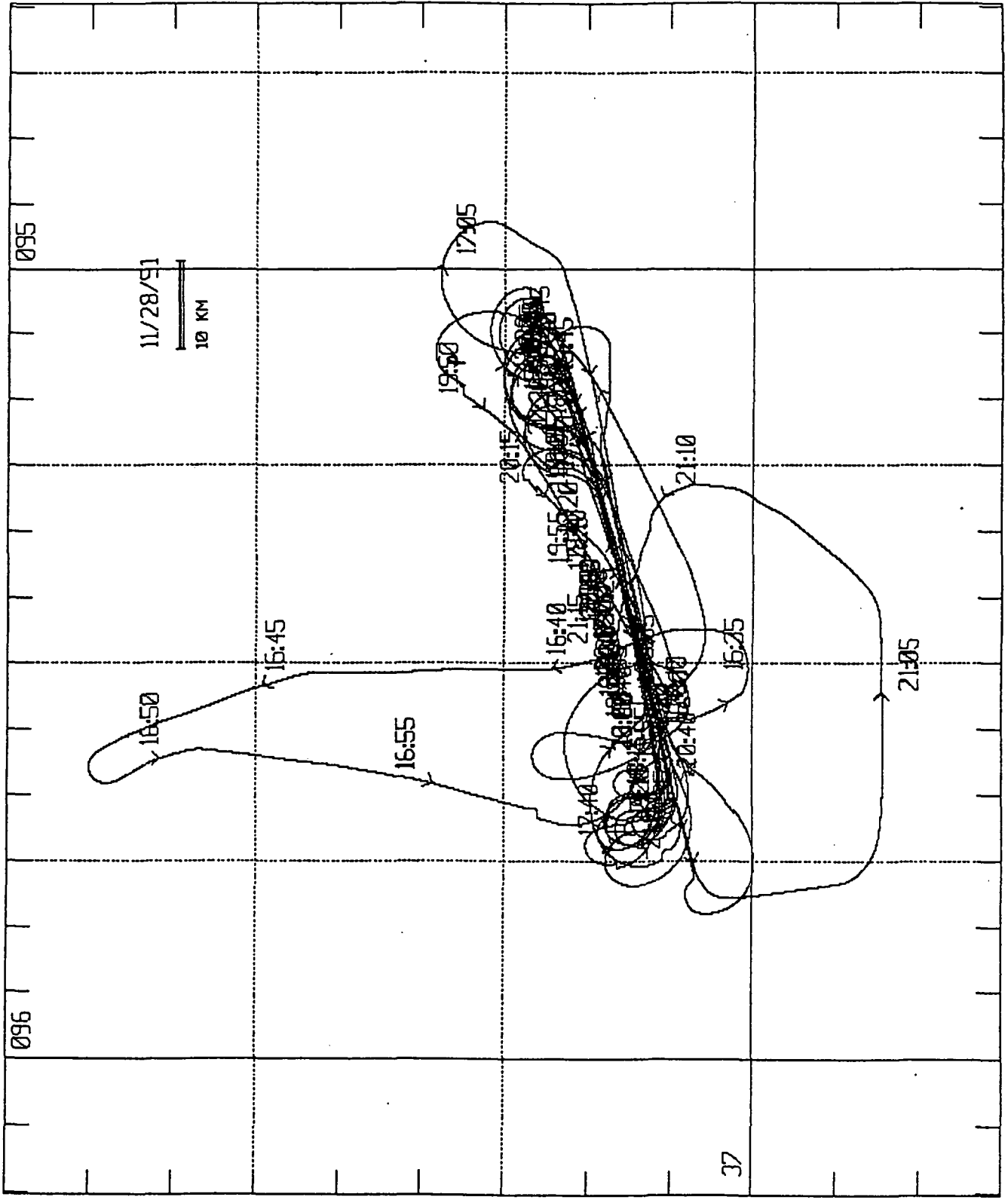
The plotted altitudes are Pressure Altitude corrected to geopotential height above Mean Sea Level using data from CLASS rawinsonde soundings.

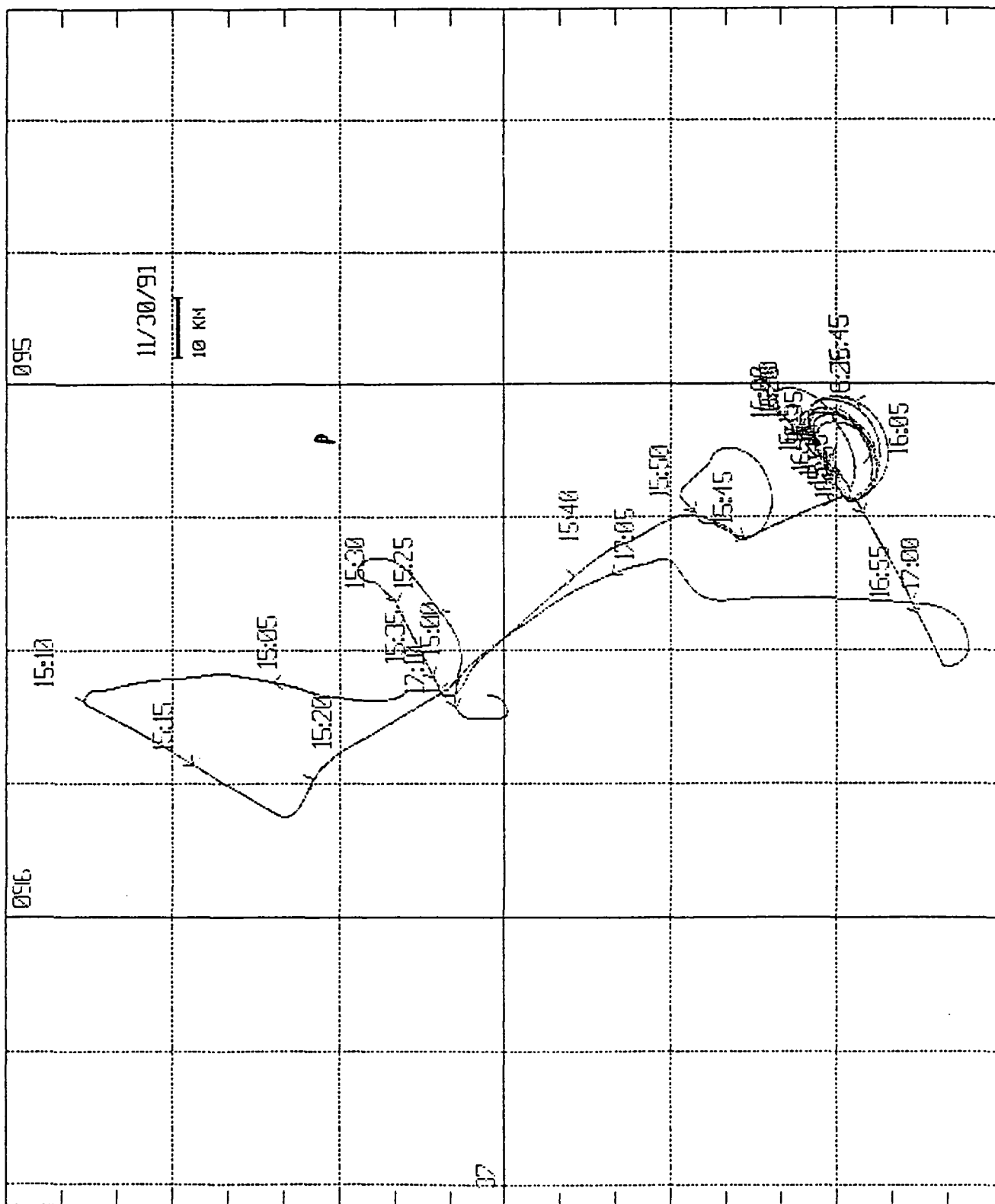


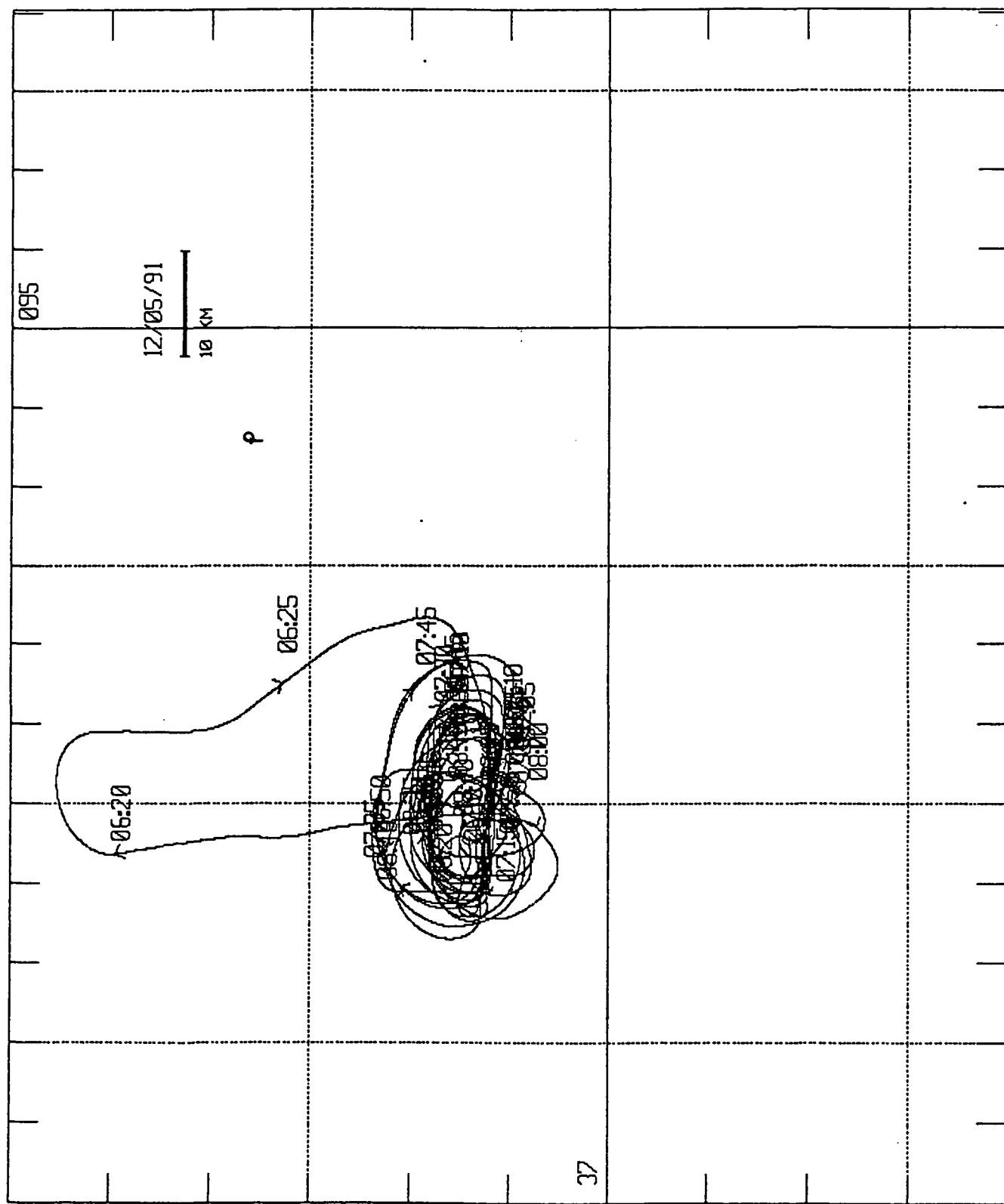


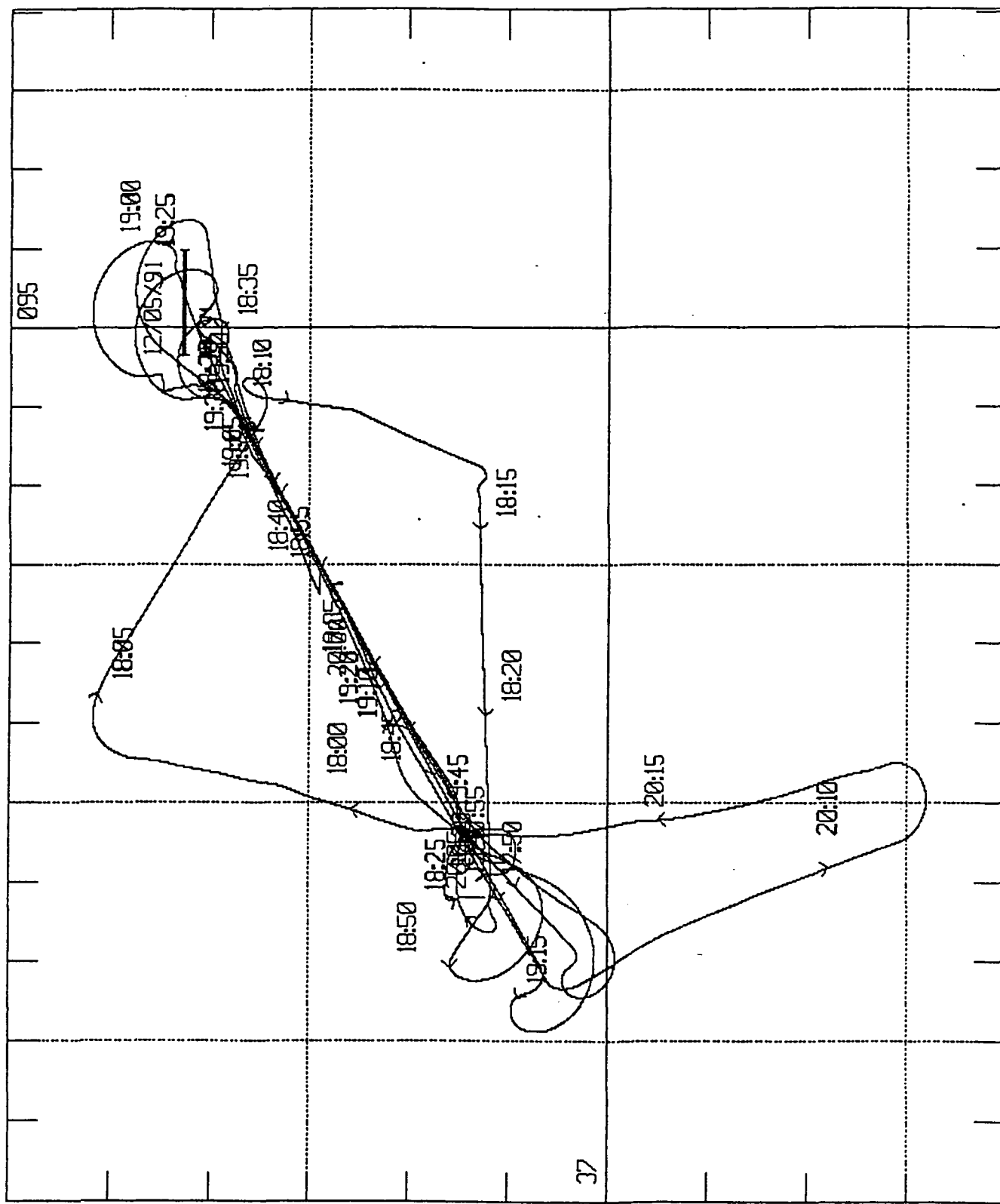


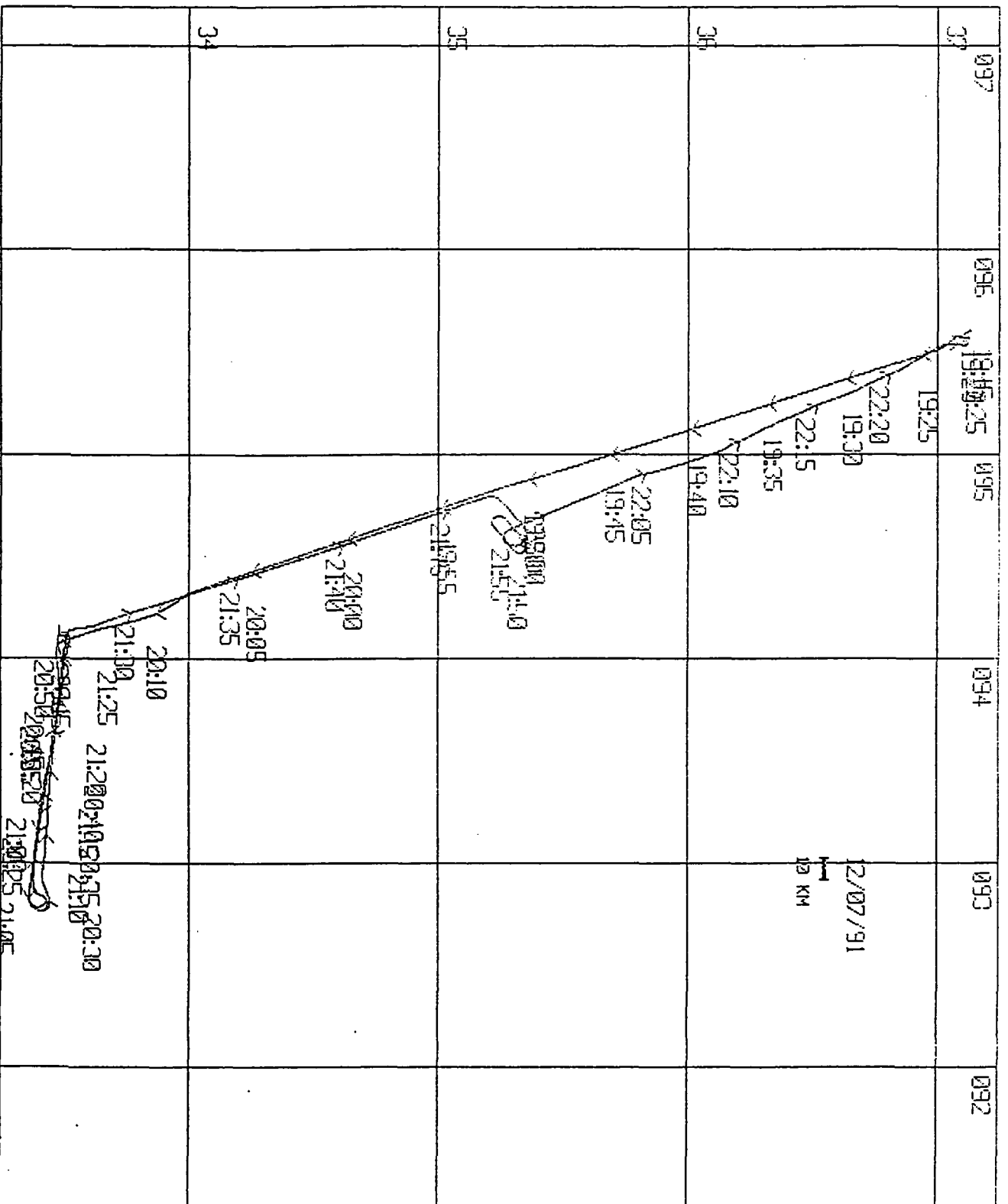


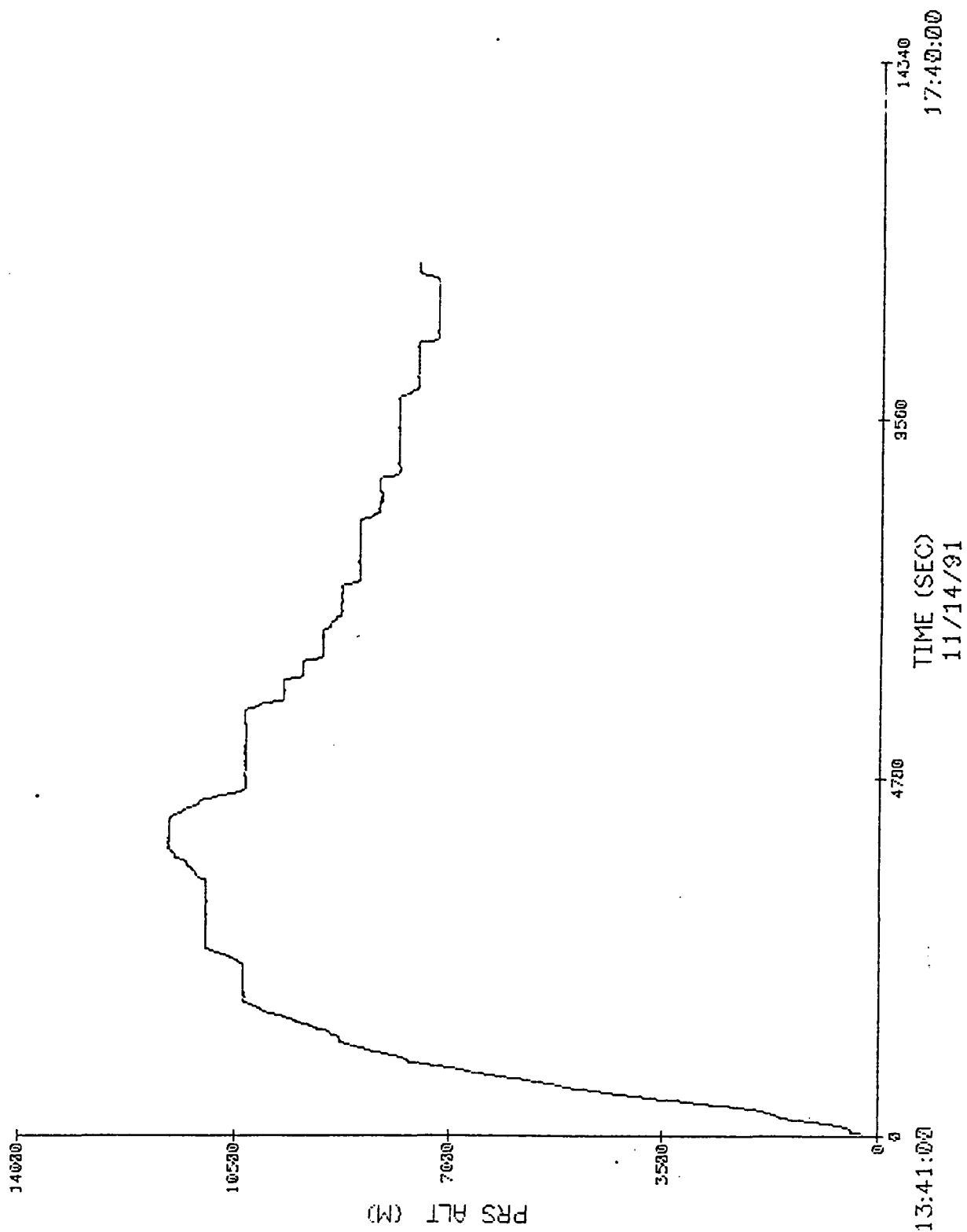


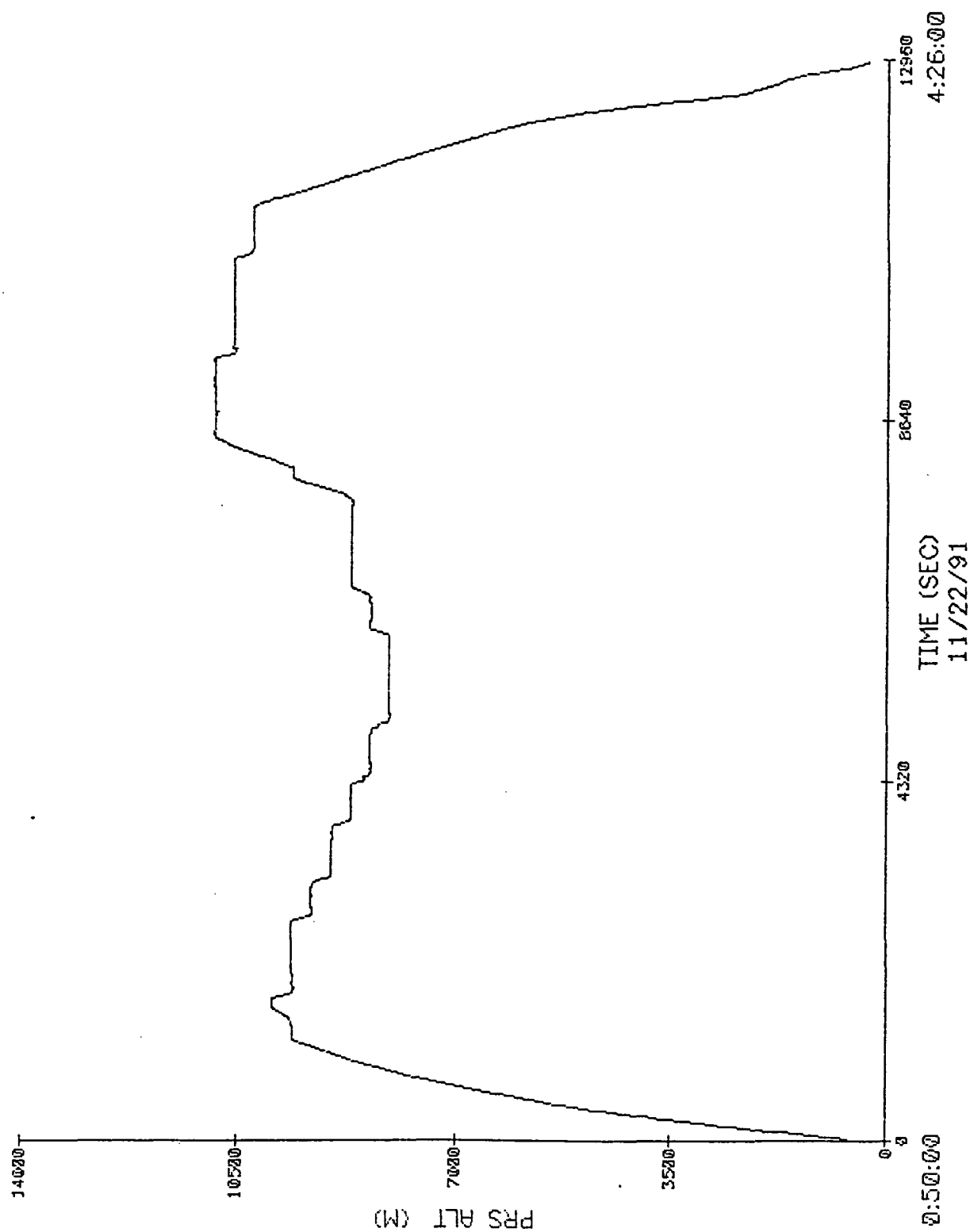


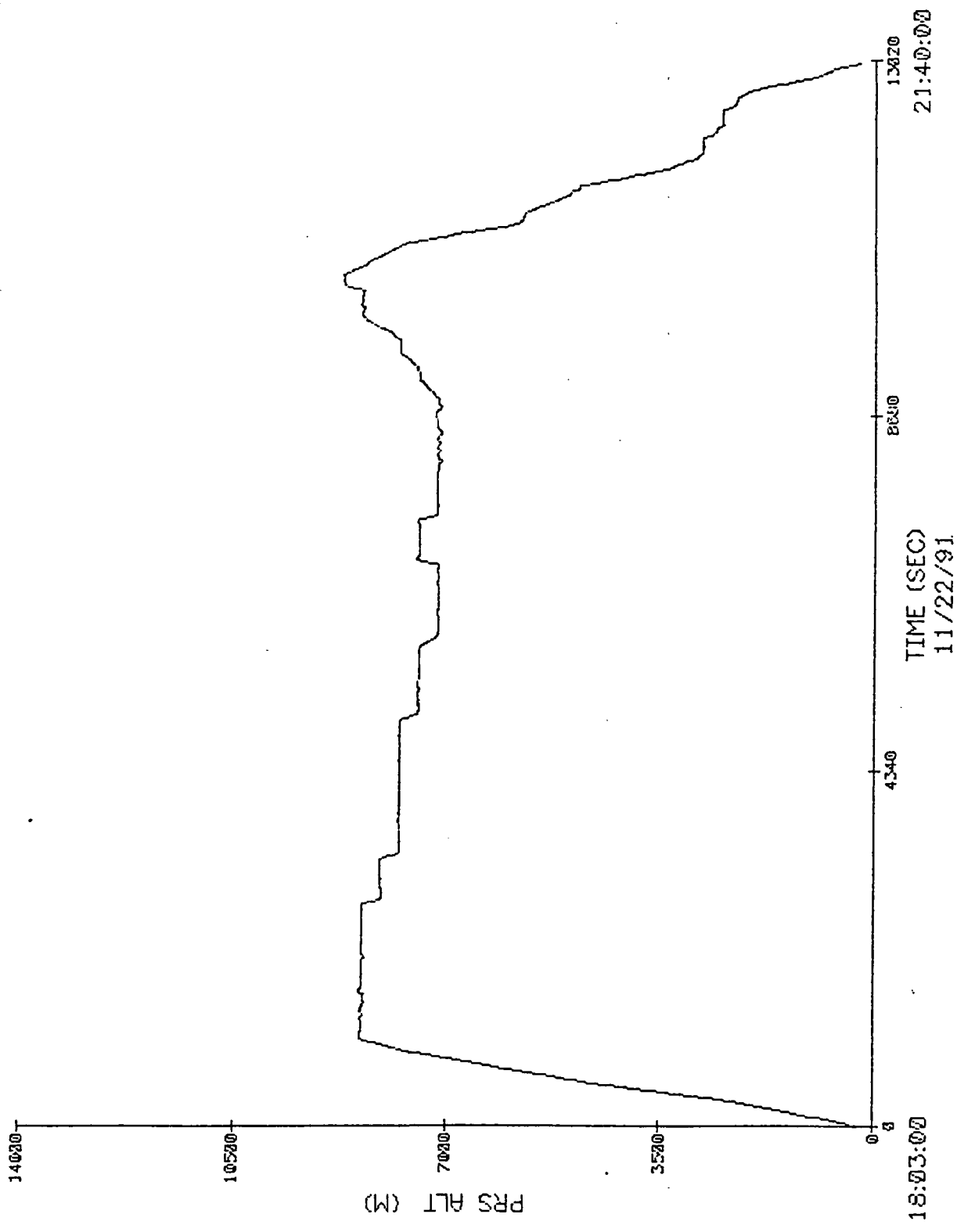


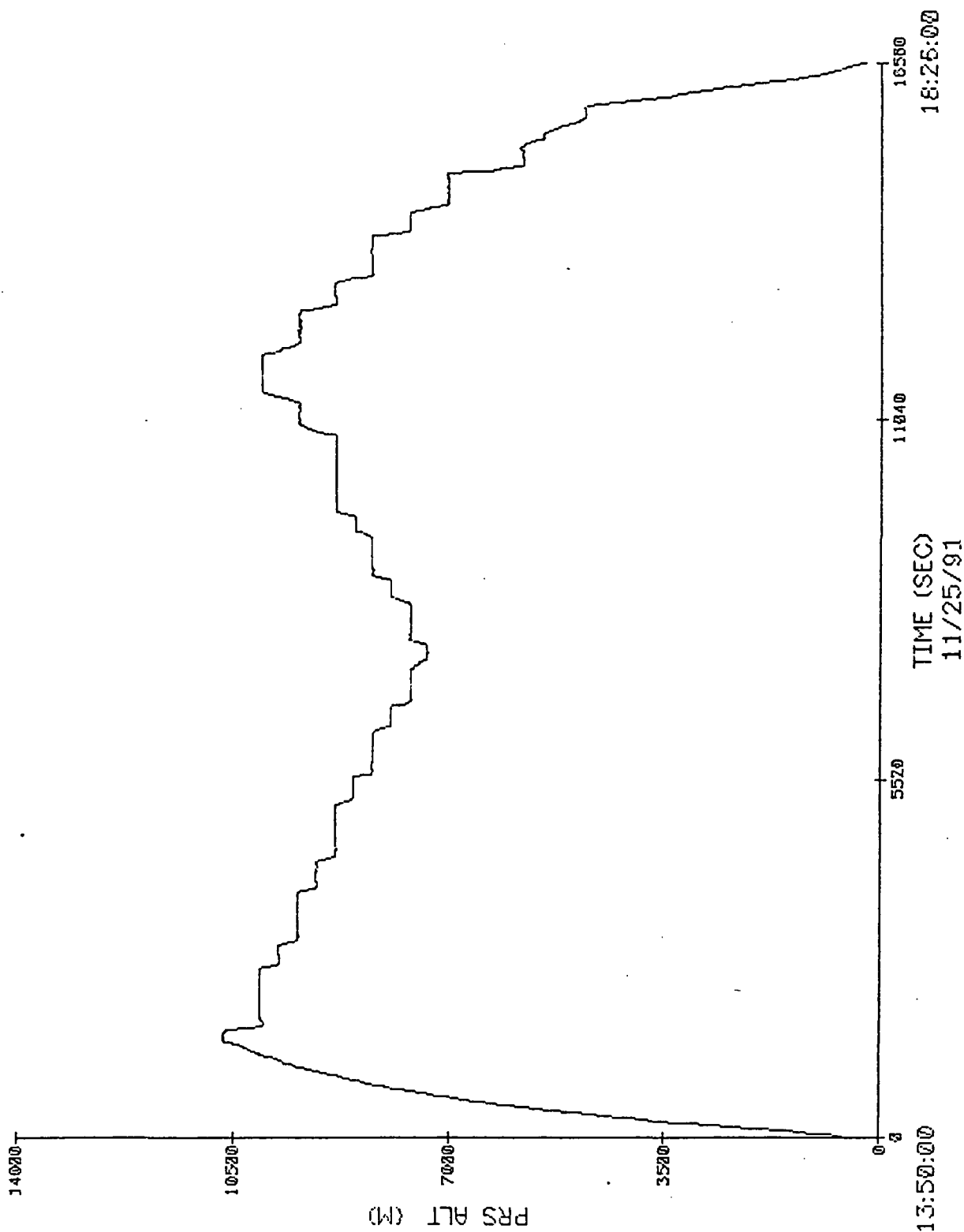


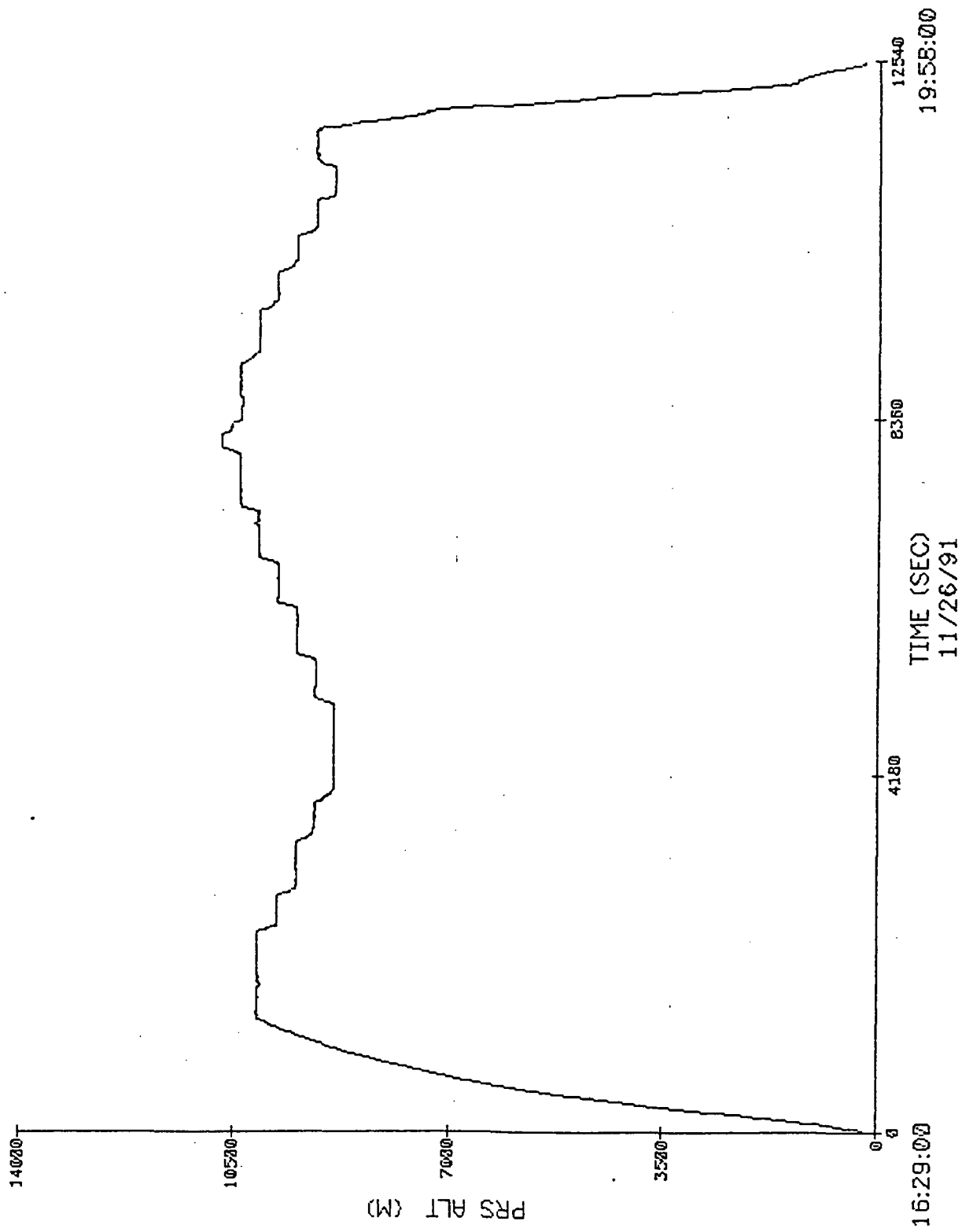


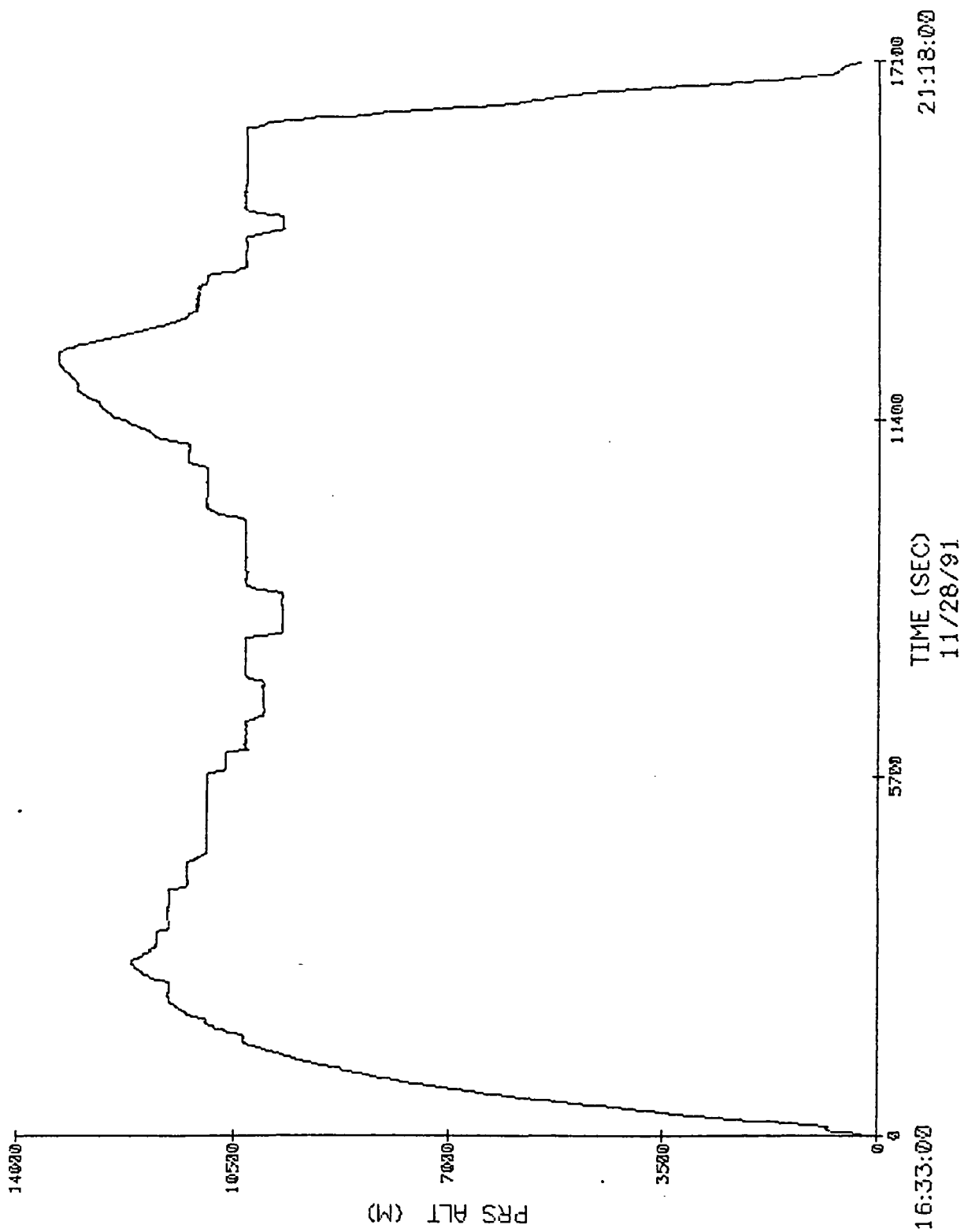


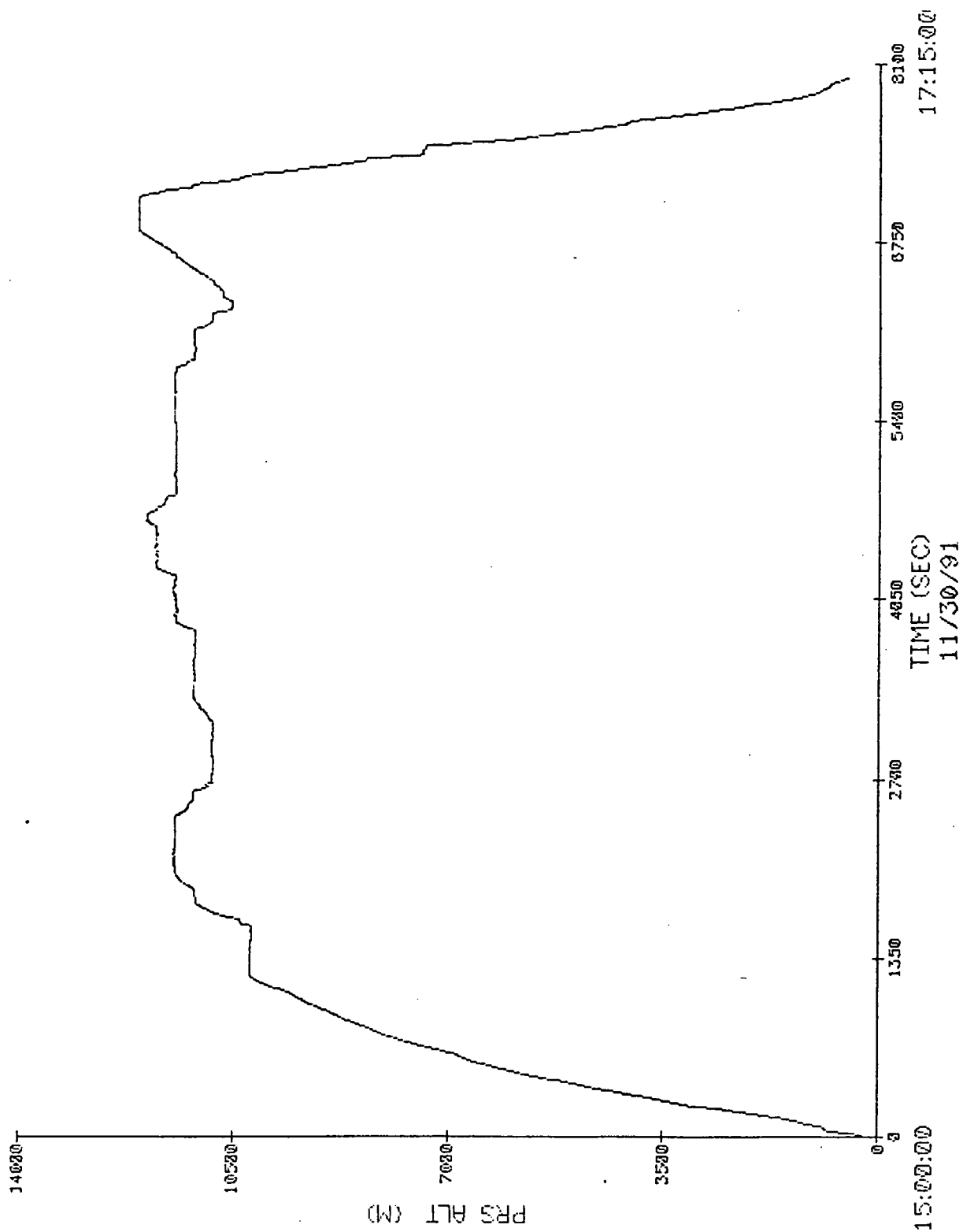


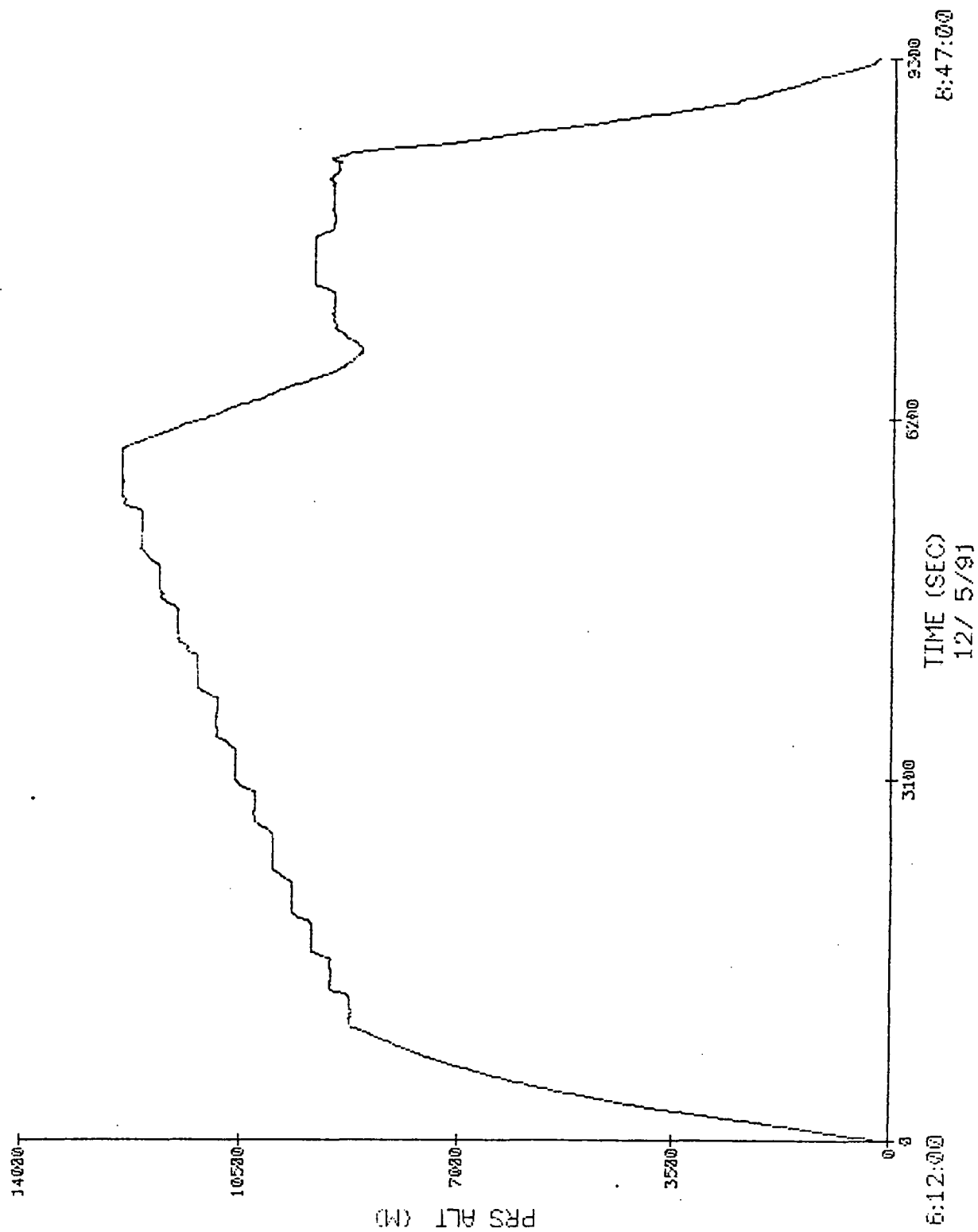


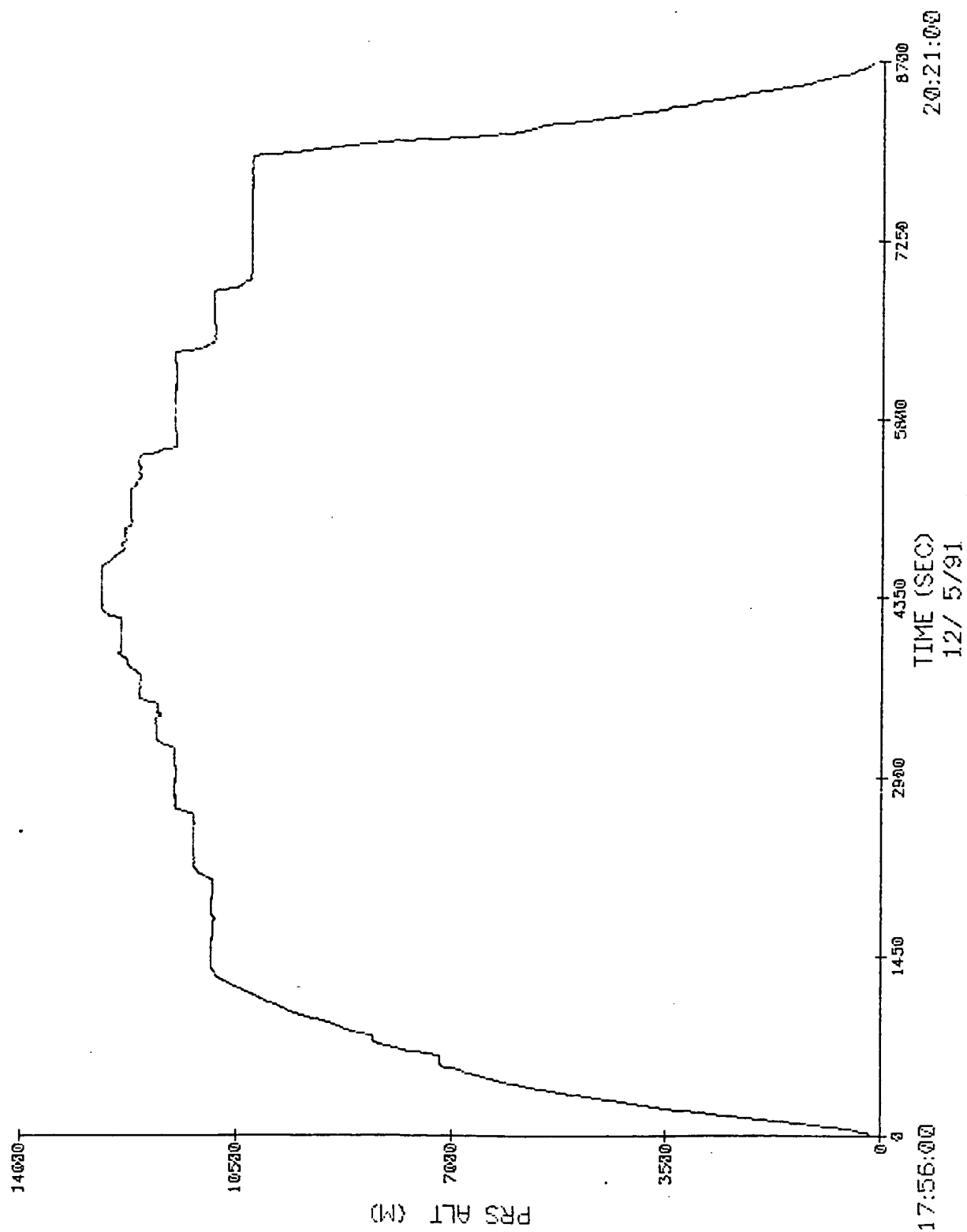


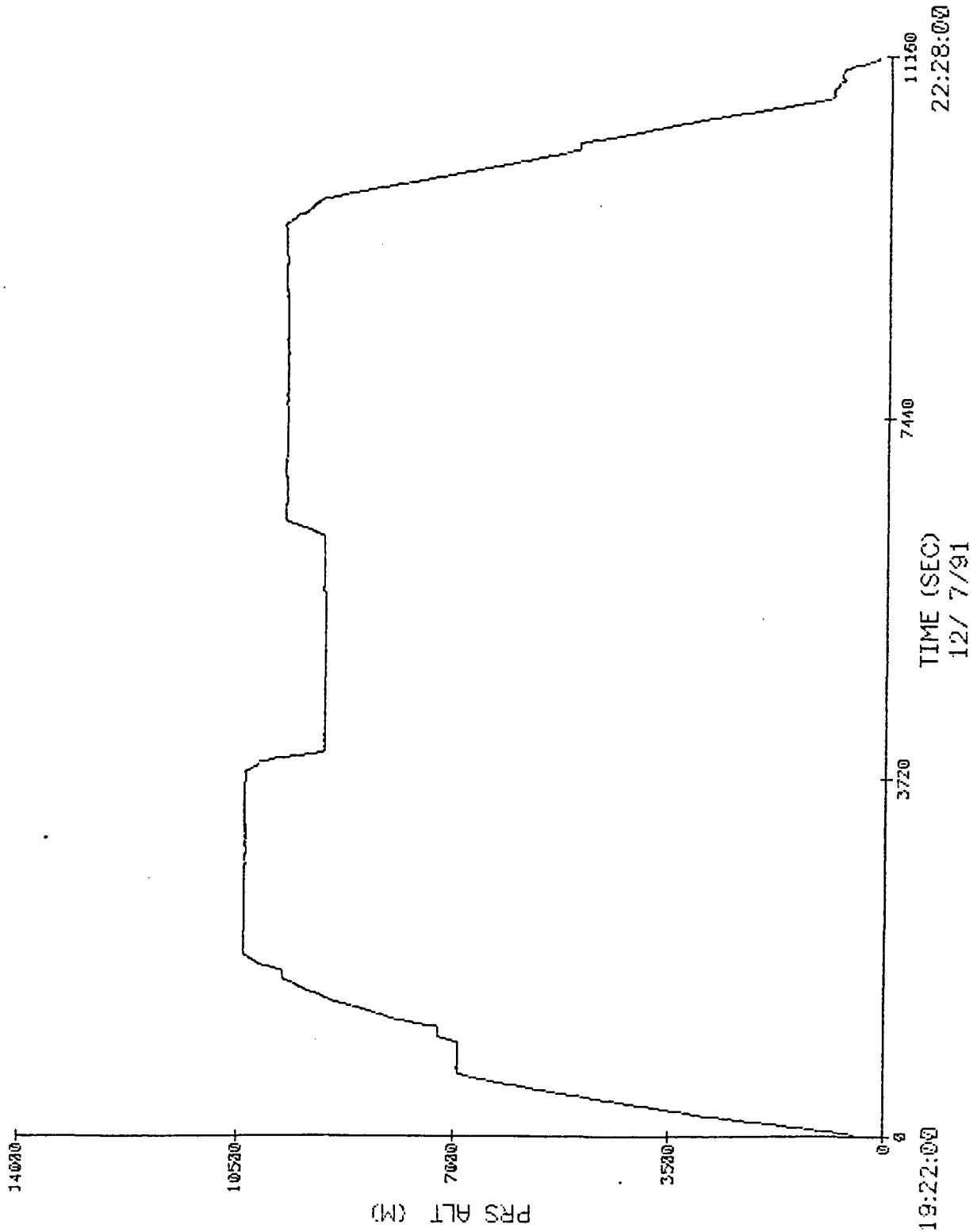












Part 2 - Mission Summaries

The data legs established in these summaries represent straight-line or spiral descent flight segments. Altitudes are pressure altitudes given in hundreds of feet (e.g., 280 = 28,000 feet) MSL. The comments were derived from flight notes, which reflect observations and values taken from real-time displays of 2-D particle images, particle concentrations, and other parameters.

11/14/91

Southwest-Northeast legs over hub in low Ci. Supercooled water encountered. Multiple layers over hub.

<u>Leg#</u>	<u>Start</u>	<u>Stop</u>	<u>Alt.</u>	<u>Comments</u>
1	152000	153200	310/290	Step descent to get into Ci. Ci is patchy. Southwest leg.
2	153600	153915	280	Thin Ci.
3	154435	155700	270	Thicker Ci SW of CFV.
4	160100	160630	260	Most images 3-400 μ m, irregular. Some rosettes? Out of Ci at NE end.
5	161000	162350	250	Into SLW near SW end. T = -26° C.
6	162630	163200	240	Out of SLW NE of CFV.
7	163600	164800	240/230	Near bottom of Ci.

11/22/91 First Flight

East-west passes over hub followed by east-west legs through Ci band northwest of CFV. Multiple optical effects noted during climb. (Full moon).

<u>Leg#</u>	<u>Start</u>	<u>Stop</u>	<u>Alt.</u>	<u>Comments</u>
1	012030	013340	310	Only occasional ice crystals. Westbound
2	013700	014115	300	A few crystals.
3	014400	015230	290	Ci is patchy.
4	015600	020050	280	No Ci.
5	020400	021200	270	Ci thin and patchy.
6	021500	021940	260	
7	022400	023035	260	Ci getting denser.
8	023410	023845	270	
9	024200	025000	280	
10	025505	025710	280	800 μ m columns, rosettes, 10-20/l. Halo around moon. Orthogonal to wind.
11	025810	030330	280/310	Ramp climb. Columns, rosettes.
12	030415	031310	310/350	Top of Ci between 340 and 350.
13	032600	032730	350/340	Descent into cloud top.
14	033245	033250	340	Cirrus seems to be dissipating. 5-10/l.
15	033640	034550	340	2-6/l, mostly null images.
16	034835	035430	330	2-300 μ m crystals, T = -51° C.
17	035600	041310	330/190	Lagrangian spiral. Smaller crystals at 30,700, 10-15/l. Base Ci around 24,300. Corona & halo around moon. Visually hazy below base.

11/22/91 Second Flight

Northeast-Southwest legs in Cirrus under ER-2, followed by orthogaal step pattern. Supercooled water in wave.

<u>Leg#</u>	<u>Start</u>	<u>Stop</u>	<u>Alt.</u>	<u>Comments</u>
1	183040	183420	270	Near top of layer. No Ci over hub this level. NE heading.
2	18385	184550	270	Just over top of Ci.
3	184720	185115	270/260	Just in top at 260. 50-150 μ m ice, 10-30/l
4	185340	190140	260/250	Ci getting patchy, moving northeast.
5	190310	191430	250	Close to top. Picked up SLW @ -32.7° C.
6	191650	192520	250	2D images irregular 2-400 μ m, few/l. Near SW end, crystals to 7-800 μ m, up to 100/l. Higher tops, too.
7	192730	193035	240	
8	193230	194100	240	2D 400-800 μ m, 40-60/l. Wave-like feature with supercooled LW near SW end.
9	194240	194630	230	SLW again with updraft. Halo in turnaround.
10	194900	195625	230	Wave motion again with SLW. Ci dissipating/moving.
11	195930	200420	240	Mostly on top.
12	200520	200930	240/230	Perpendicular leg to SE. Flying through Ci .
13	202005	202640	230	Reverse, orthogonal to wind. Some SLW, T=-28.5° C.
14	202930	203550	230/240	Ice to 1 mm, no SLW.
15	203740	204150	242/250	
16	204305	204537	250/262	
17	204710	205240	270	Passing through higher elements (Cirrocumulus?).
18	205300	205440	280	Repenetration of cloud tower.

11/25/91

Two segments: First, steps through evaporating deep deck of small ice. Second, steps through deck over Tulsa, coordinated with Sabreliner.

<u>Leg#</u>	<u>Start</u>	<u>Stop</u>	<u>Alt.</u>	<u>Comments</u>
1	142030	143148	330	At Ci top. Hole over CFV. Westbound.
2	143500	143850	320	2D-C null images.
3	144335	145250	310	1-7/1, a little denser near CFV. Small crystals. Mid-level undercast.
4	145650	150035	300	Ci is visually thin.
5	150715	151455	290	Thin Ci. Glory on undercast. Now between layers?
6	151815	152210	280	Only a few ice crystals.
7	152620	153335	270	Larger (2-300 μ m) crystals at start of leg. Smaller near CFV.
8	153710	154035	260	150-300 μ m crystals.
9	154245	155010	250	150-350 μ m ice.
10	155300	155620	240	No ice.
11	160010	160640	250	Few small crystals. Ci seems to be banding, getting patchy.
12	160930	161250	260	Very small crystals, none over hub.
13	161735	162350	270	No ice.
14	162640	162910	280	No ice.
15	163250	163930	290	No ice.
16	165810	170110	310/330	Climb in Ci over Tulsa. 20-30/1, small.
17	170130	170310	330	Northbound leg.
18	170510	170700	330	Southbound.
19	171320	171450	310	Small ice crystals.
20	172100	172330	310/290	Descent, southbound.
21	172730	172840	290	20-30/1, 200 μ m crystals. Thinner Ci over TUL.
22	173030	173300	270	Southbound.

<u>Leg#</u>	<u>Start</u>	<u>Stop</u>	<u>Alt.</u>	<u>Comments</u>
23	173600	173740	271	Northbound
24	174000	174305	270/250	Halo observed.
25	174500	174630	250	Northbound.
26	174710	175130	250/230	Descent and level leg. A few/1, 200 μ m crystals.
27	175250	175700	230	
28	175710	175912	230/190	Rapid descent. Cloud base 21,500. Halo around sun.

11-26-91

East-west steps through layer; 20 nm legs. 1st leg eastbound.

<u>Leg#</u>	<u>Start</u>	<u>Stop</u>	<u>Alt.</u>	<u>Comments</u>
1	165230	165615	330	At base of higher layer.
2	165940	170520	330	Counts on FSSP, no 2D images.
3	171022	171425	320	Small ice.
4	171810	172410	310	Low concentration; possible contrail penetration.
5	172921	173245	300	In cloud at the hub.
6	173630	174132	290	No Ci until hub.
7	174655	175020	290	Conc. to 16/l.
8	175520	175936	300	Conc. to 39/l, 300 μ m. Ci to 10 east of hub
9	180440	180810	310	Conc. to 10/l, 200 μ m.
10	181240	181733	320	Smaller ice, lower conc.
11	182330	182945	330	Some Ci wisps - Contrail penetration.
12	183346	183934	340	Some FSSP counts. 2D-C Quit. -59.0° C.
13	184429	184755	350/340	Top Ci at 34,400, at tropopause.
14	185055	185726	340	Contrail penetrations. Ci near hub.
15	190255	190600	330	
16	191100	191532	320	Thicker Ci overhead.
17	192040	192330	310	Halo.
18	192530	192931	300	Good halo.
19	193420	193700	290	End of replicator film.

11/28/91

High Ci over hub, E-W legs. No 2D-C data. First leg eastbound.

<u>Leg#</u>	<u>Start</u>	<u>Stop</u>	<u>Alt.</u>	<u>Comments</u>
1	165925	170230	330/350	Ci base at 34,000'.
2	170800	171715	370/388	Ci top at 37,700'.
3	172340	172630	377	About 100' below top. Out of Ci toward eastern end of leg.
4	173000	173730	370	Ci seems thin, patchy.
5	174200	174430	360	
6	174730	175600	350	No solar optical effects seen so far.
7	180000	180300	350	
8	180630	181330	350/340	Ci thinner near hub. May have penetrated contrait near start of leg.
9	181730	182030	330	
10	182400	183130	320	Mostly out of cloud. Some higher CN counts.
11	183630	183910	330	Out of cloud.
12	184300	185210	330/310	Back into Ci 11 E CFV. New patch moving in.
13	185530	185900	310/330	Ci dense, particles larger. Ramp climb.
14	190350	191600	330	Thickening Ci, no optical effects.
15	192045	192310	350	Light turbulence.
16	192700	193600	350/360	May be on top at 360.
17	200000	201120	430/355	Descent spiral near hub. Double tropopause.
18	201500	202030	355/350	Hazy, not in Ci?
19	202415	202635	330	In cloud, 3 miles east of CFV.
20	203000	203600	330/310	
21	204100	204425	330	Thin Ci, near top 15 east of CFV.
22	205050	210000	330	Into Ci near hub, along with higher CN counts.

11/30/91

Step profile through sub-tropical jet cirrus. All legs southwest bound. Flight not over the hub.

<u>Leg#</u>	<u>Start</u>	<u>Stop</u>	<u>Alt.</u>	<u>Comments</u>
1	154930	155200	350	At northwest edge of cloud; will move southeast.
2	155900	160330	360	2D conc. 10-20/l, sizes to 100 μ m.
3	160730	161045	370	1-5/l.
4	161400	161630	380	Above cloud.
5	162700	163000	370	A few crystals at SW end of leg.
6	163340	163610	370	Up to 10/l.
7	163930	164315	360/350	52/l, to 250 μ m at start; fewer at SW end. Possible fall streaks.
8	164640	165400	347/390	Climb through layer - base 34,300, top 37,000.

12/05/91 - 1st

East - West Legs from 5 miles east CFV to CFV

<u>Leg#</u>	<u>Start</u>	<u>Stop</u>	<u>Alt.</u>	<u>Comments</u>
1	063000	063145	280	No cloud.
2	063520	063727	290	100-300 μm , no habit.
3	064048	064240	300	5-60/l, up to 400 μm .
4	064616	064834	310	Variable conc., strong speed shear in vertical.
5	065311	065517	320	Small patch, 100-200 μm .
6	065927	070119	330	Low conc., 50-100 μm .
7	070519	070723	340	No cloud.
8	071240	071440	350	Occasional 1-3/l, 100-200 μm .
9	071827	072042	360	15-25/l, 100-300 μm .
10	072433	072714	370	10-30/l, 50-300 μm . Some columns.
11	073055	073335	380	2-5/l, 50-150 μm .
12	073855	074142	390	3-6/l, < 100 μm .
13	074800	075020	400	No 2D, some FSPP. -64° C.
14(Spiral)	075040	080430	400/275	Top layer 400-377, bottom 311-278. Higher O ₃ 335-305.
15	081040	081243	290	60-197/l.
16 to	081717	081935	300	Only in cloud last 20 sec. Up 130/l, 200 μm .
17	082423	082745	290	Conc. to 130/l, to 200 μm . Saw lidar.

12/05/91 - Second Flight

Shuttle between CFV and PAR. Leg 1 westbound to CFV. Leg 2 northeast bound CFV-PAR.

<u>Leg#</u>	<u>Start</u>	<u>Stop</u>	<u>Alt.</u>	<u>Comments</u>
1	181500	182330	350	Small ice, low concentrations, some higher CNC.
2	182545	182950	350	3-15/l, 50-100 μ m.
3	183345	184740	360/370	Small ice, 1-6/l (higher near CFV).
4	185300	185630	380/390	FSSP counts, none on 2D-C.
5	190200	191400	400/410	FSSP; No 2D-C.
6	191830	192245	395	FSSP; No 2D-C.
7	192900	194100	370	2D to 8/l, extremely small.
8	194450	194925	350	Up to 9/l, 50-150 μ m size.
9	195300	200600	330	Near base of Ci over PAR. Higher Conc. mid-leg. Larger particles over hub-columns, rosette, plates.

12/7/91

East-West legs from Texarkana.

<u>Leg#</u>	<u>Start</u>	<u>Stop</u>	<u>Alt.</u>	<u>Comments</u>
1	201545	202800	330 then descent	Ci 9-50/l, thinner at east end. Near top of layer, higher layer above.
2	203200	204840	290	In & Out of Ci, band oriented SW-NE.
3	205100	210445	290	Ci to 600 μ m, one patch to 84/l.
4	210750	212605	310	Near top, low conc. High CN near end of leg.

Part 3 - Data Leg Summaries

The following pages depict summaries of each data leg flown during the IFO. There are four types of data included on each page: leg averages, time series, particle spectra, and particle images.

Leg Averages

These are mean values for the entire leg. "Pressure Altitude" is the equivalent aircraft altitude in a standard atmosphere, which may differ from true MSL altitude by up to 300 m.

Time Series

Plots of parameter values versus time are shown for these variables: temperature, static pressure, condensation nuclei concentrations, ozone concentrations, particle concentrations and mean diameters derived from the PMS 2D-C probe, and particle concentrations and mean diameters derived from the PMS 1D-C probe. In each of these plots, the solid line refers to the variable on the left and the dashed line to the variable on the right. Plotted values are 4 Hz data, although the plotting routine has done some smoothing to the longer series.

Particle Spectra

These size spectra are derived from the PMS FSSP, 2D-C, 1D-C and 1D-P probes and are averaged for the entire leg (clear + cloudy air). They are useful more for spectral shape than absolute concentration information.

Particle Images

Each two-bar plot of particle images represents one buffer full of data from the PMS 2D-C probe, and the DelataT is the time it took to fill the buffer. A single pixel has a dimension of 33 μm . These images were selected to be representative of particles encountered during the leg.

11/14/91

15:20:00-15:32:00

Leg # 1

Averages:

Temperature: -35.0 ° C

Dew Point: -36.8 ° C

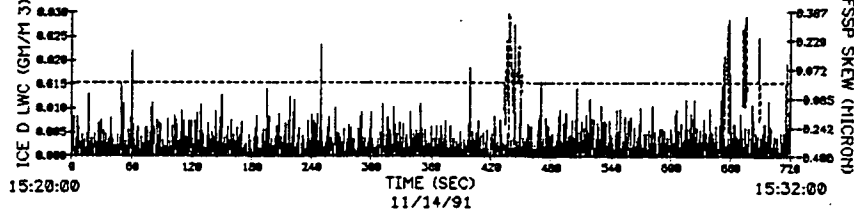
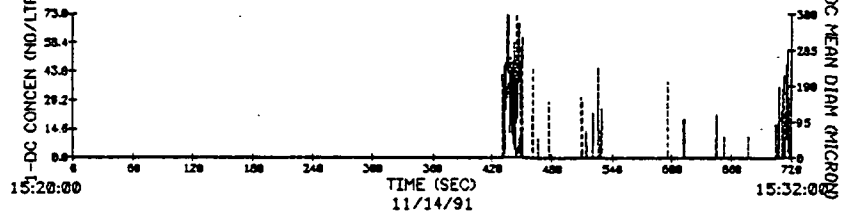
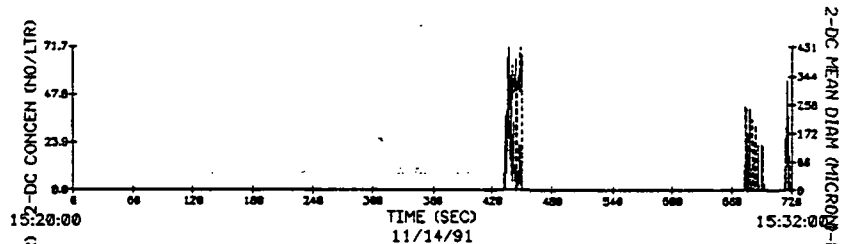
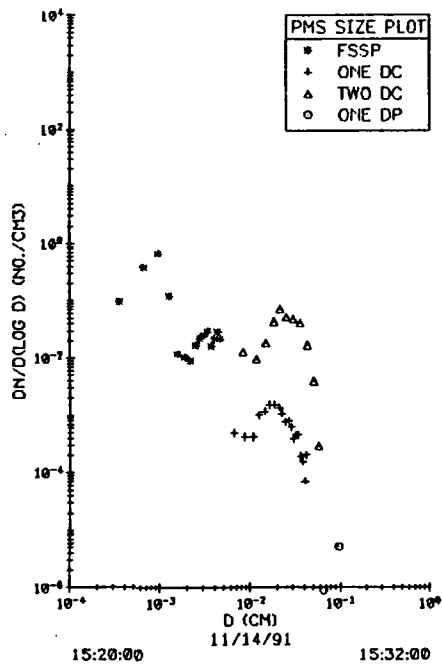
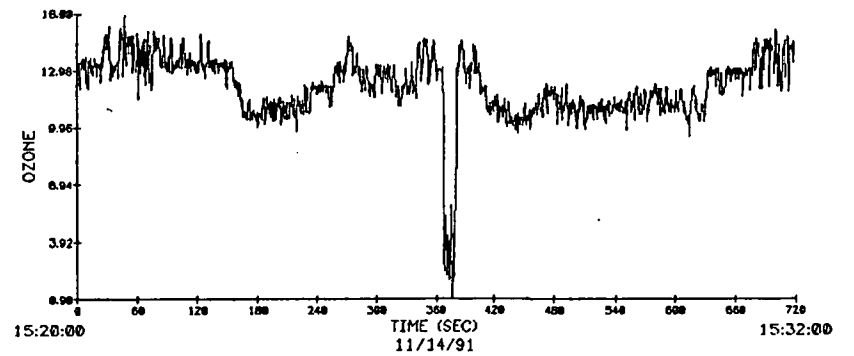
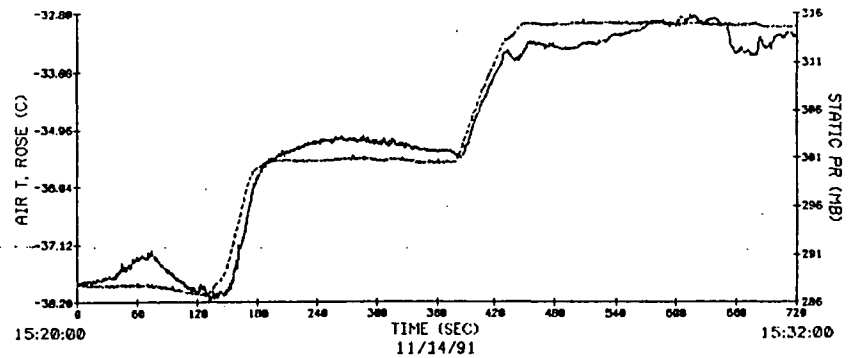
Wind Direction: 218.8 °

Wind Velocity: 41.33 m/sec

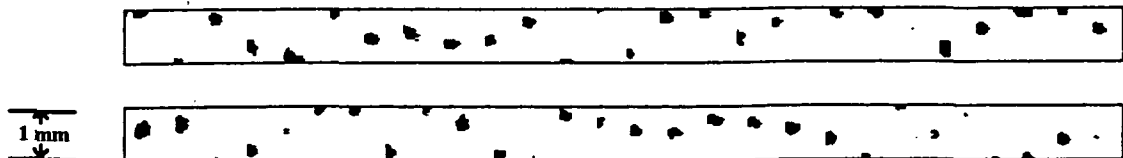
Pressure: 304.04 mb

Pressure Altitude: 9077.0 m

Aircraft Heading: 227.7 °



11/14/91 15:27:29.0464 15:27:29.7028 DeltaT: 0: 0.6564 TAS1 = 134.6 TAS2 = 135.3



11/14/91

15:36:00-15:39:15

Leg # 2

Averages:

Temperature: -31.1 °C

Dew Point: --Not Available

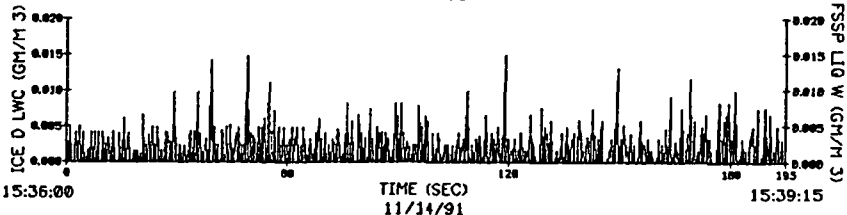
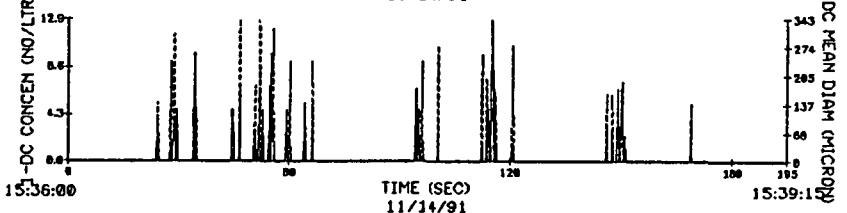
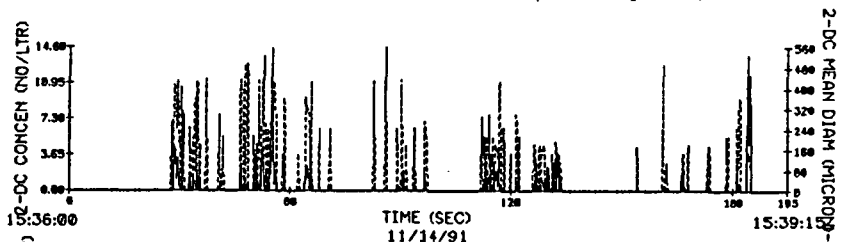
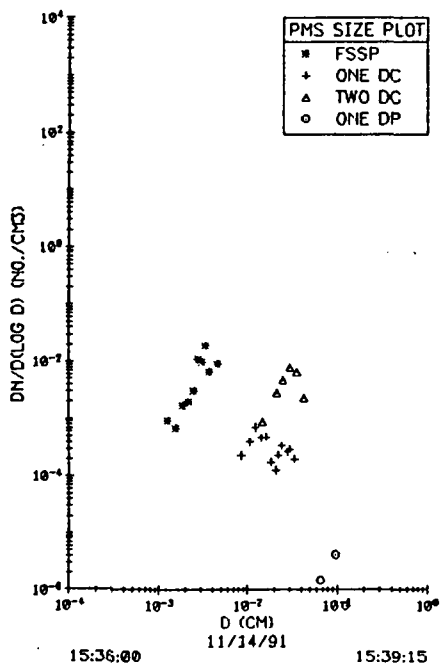
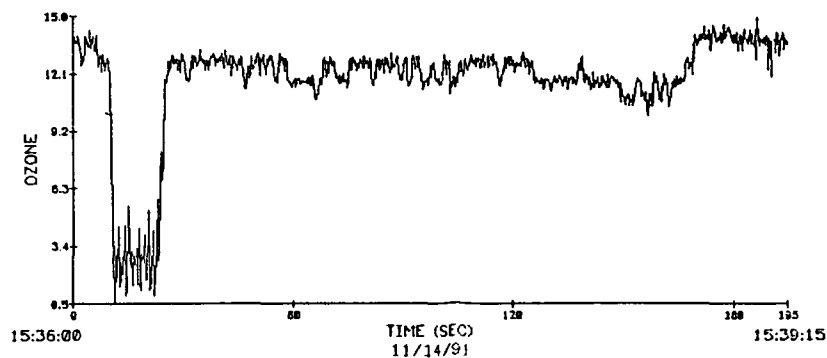
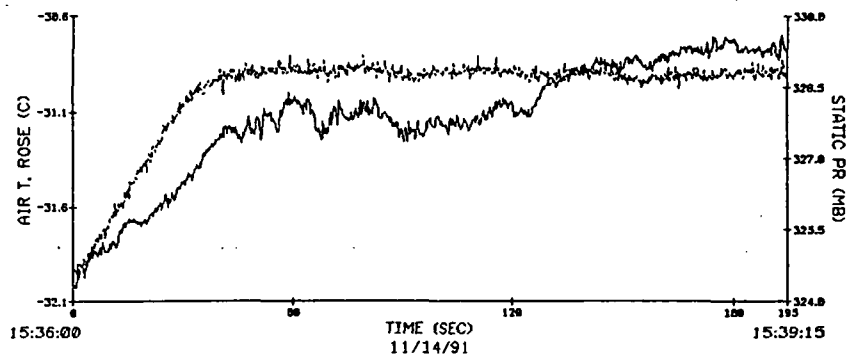
Wind Direction: 221.3 °

Wind Velocity: 39.72 m/sec

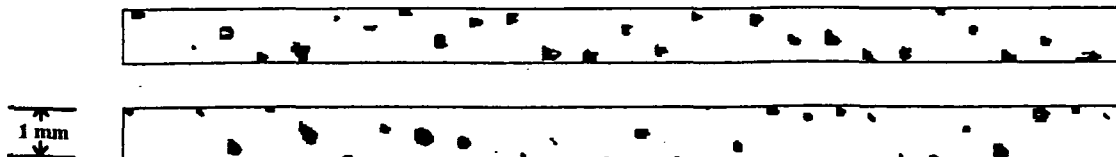
Pressure: 328.41 mb

Pressure Altitude: 8552.7 m

Aircraft Heading: 34.2 °



11/14/91 15:36:56.7668 15:37:52.0818 DeltaT: 0:55.3150 TAS1 = 123.6 TAS2 = 122.6



11/14/91

15:44:35-15:57:00

Leg # 3

Averages:

Temperature: -28.7 °C

Dew Point: --28.9 °C

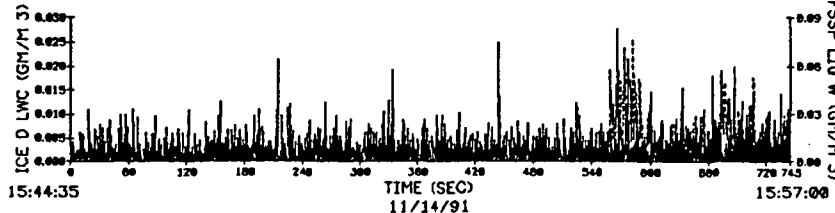
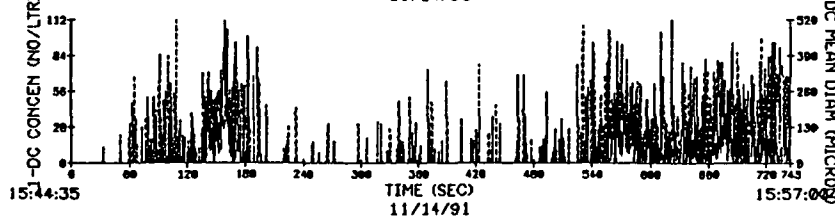
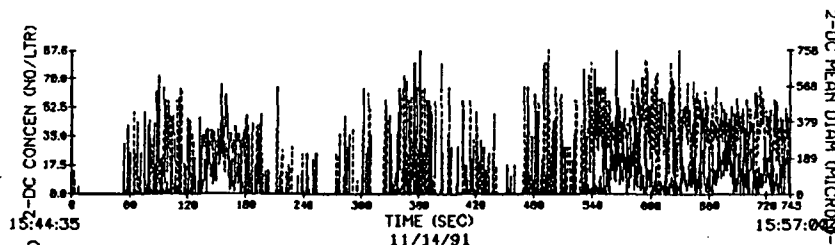
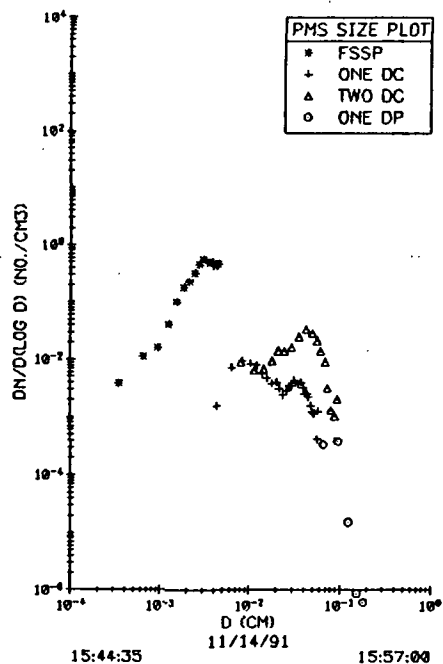
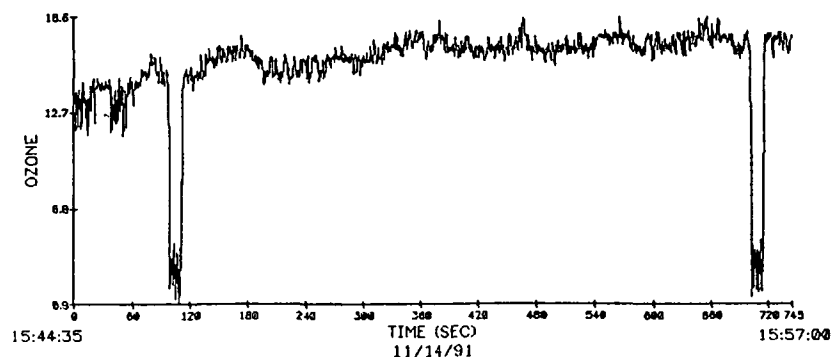
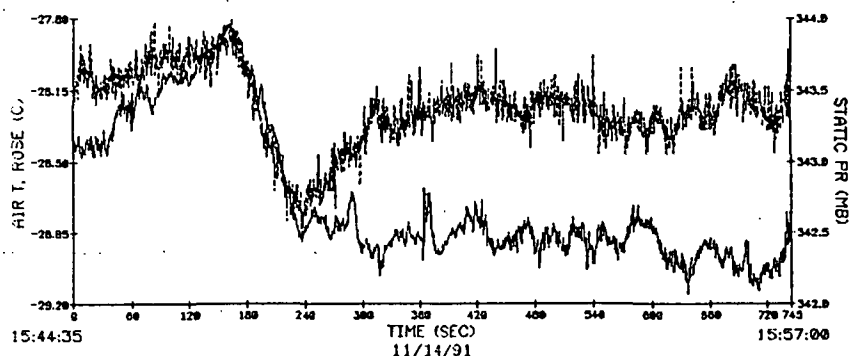
Wind Direction: 221.0 °

Wind Velocity: 38.84 m/sec

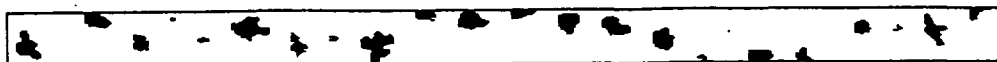
Pressure: 343.38 mb

Pressure Altitude: 8247.9 m

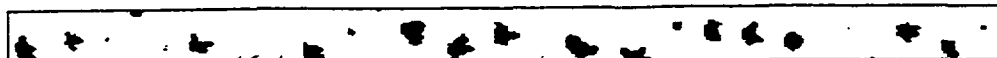
Aircraft Heading: 220.8 °



11/14/91 15:53:38.4664 15:53:41.2243 DeltaT: 0: 2.7579 TAS1 = 115.4 TAS2 = 115.3



1 mm



11/14/91

16:01:00-16:06:30

Leg # 4

Averages:

Temperature: -26.5 °C

Dew Point: -26.9 °C

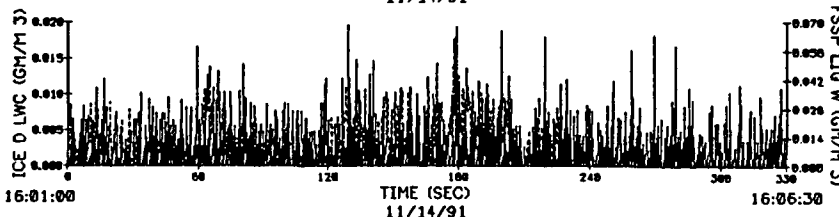
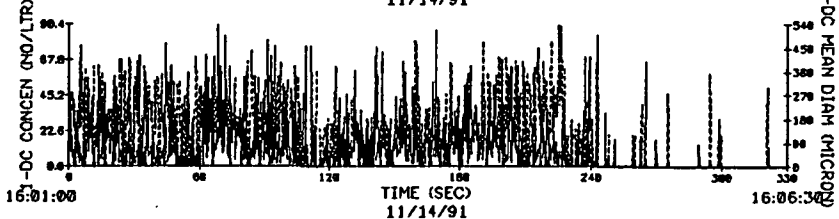
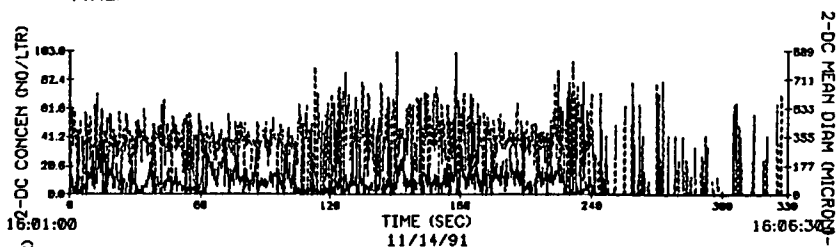
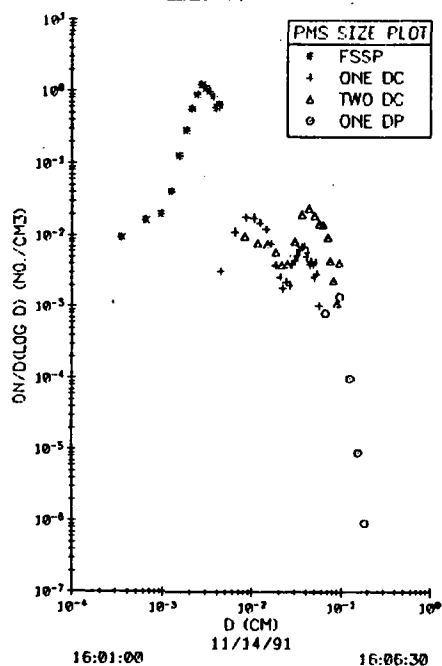
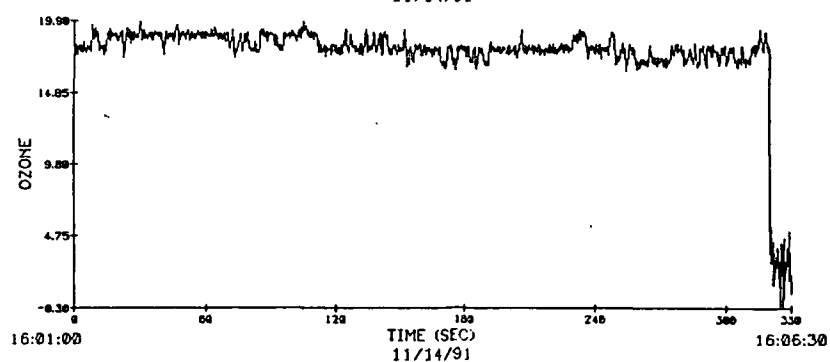
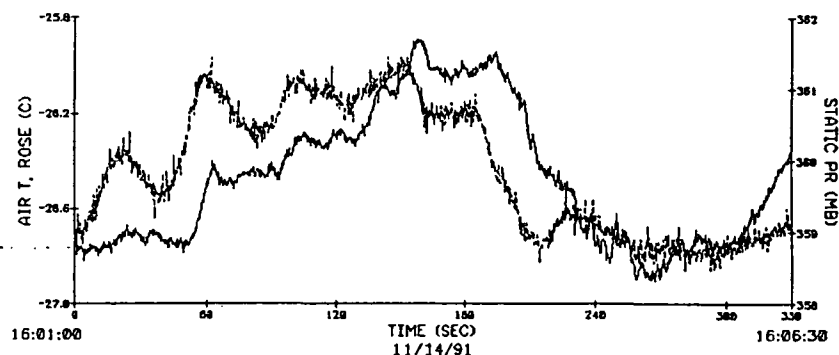
Wind Direction: 230.6 °

Wind Velocity: 35.31 m/sec

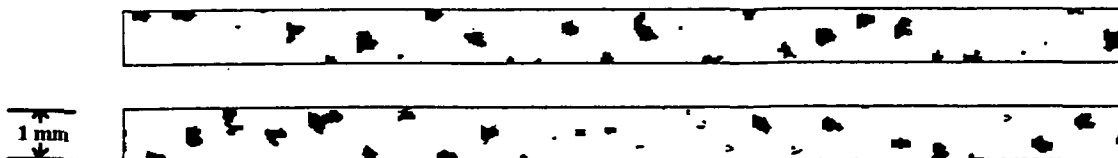
Pressure: 359.86 mb

Pressure Altitude: 7924.7 m

Aircraft Heading: 49.5 °



11/14/91 16:02:05.1626 16:02:05.6080 DeltaT: 0: 0.4454 TAS1 = 109.6 TAS2 = 109.6



11/14/91

16:10:00-16:23:50

Leg # 5

Averages:

Temperature: -24.8 °C

Dew Point: --Not Available

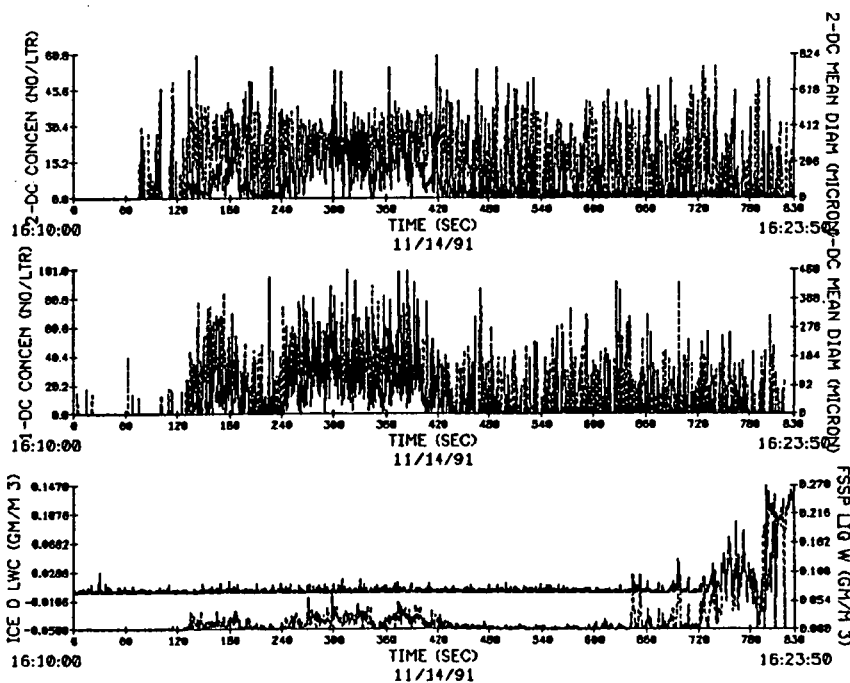
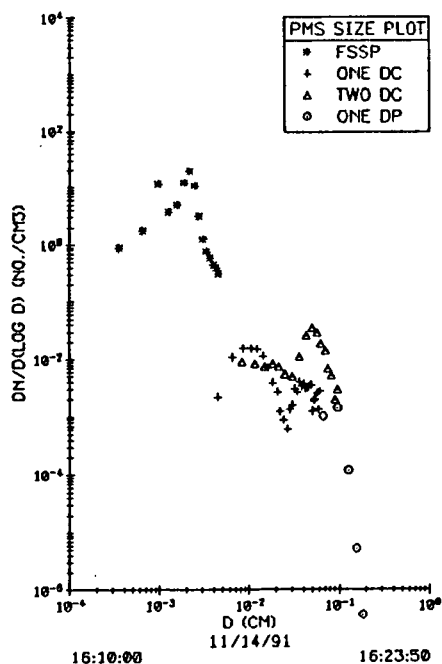
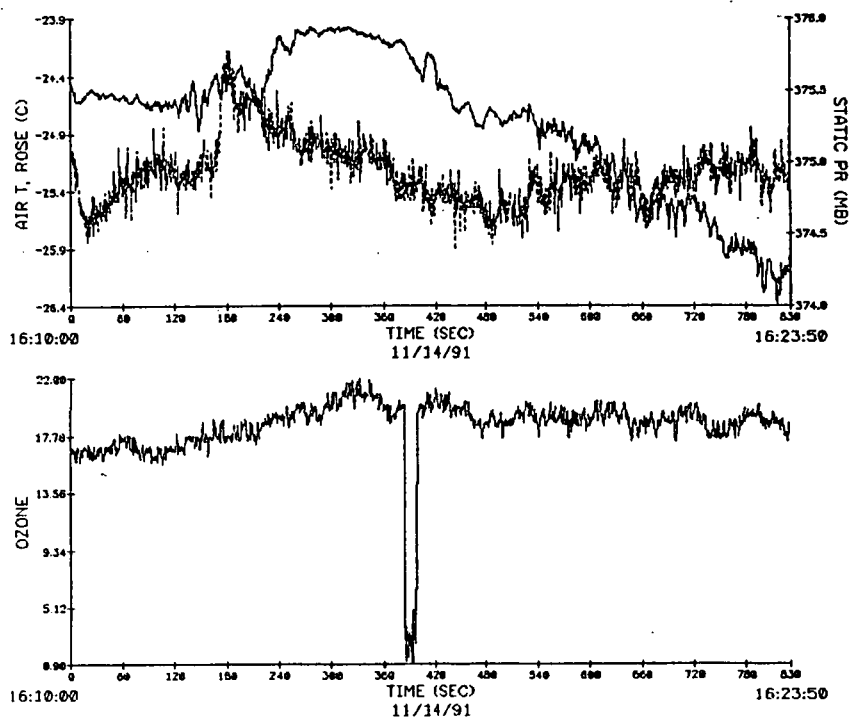
Wind Direction: 228.4 °

Wind Velocity: 34.02 m/sec

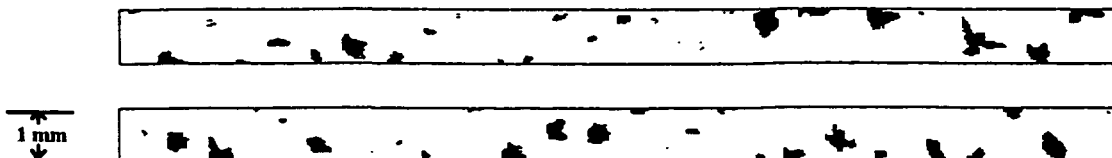
Pressure: 374.93 mb

Pressure Altitude: 7639.5 m

Aircraft Heading: 231.0 °



11/14/91 16:12:26.4876 16:12:29.0586 DeltaT: 0: 2.5710 TAS1 = 103.9 TAS2 = 102.5



11/14/91

16:26:30-16:32:00

Leg # 6

Averages:

Temperature: -23.4 °C

Dew Point: --Not Available

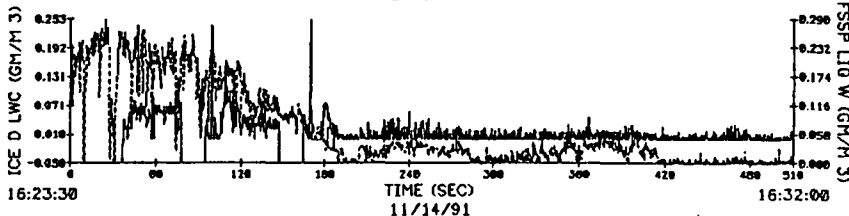
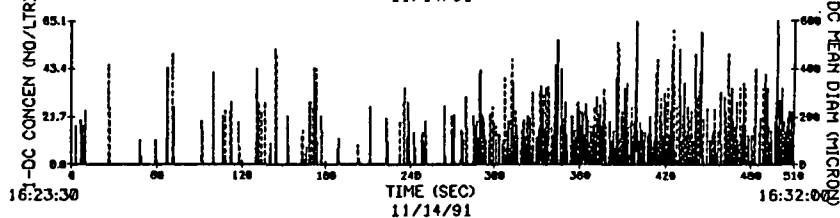
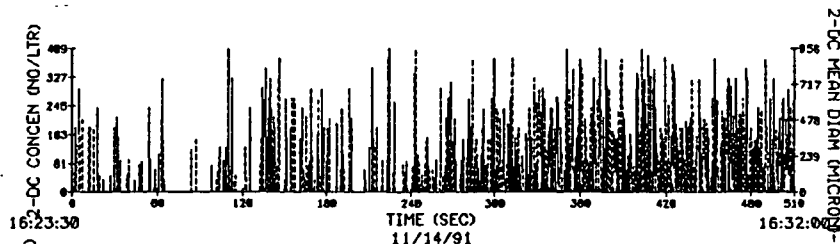
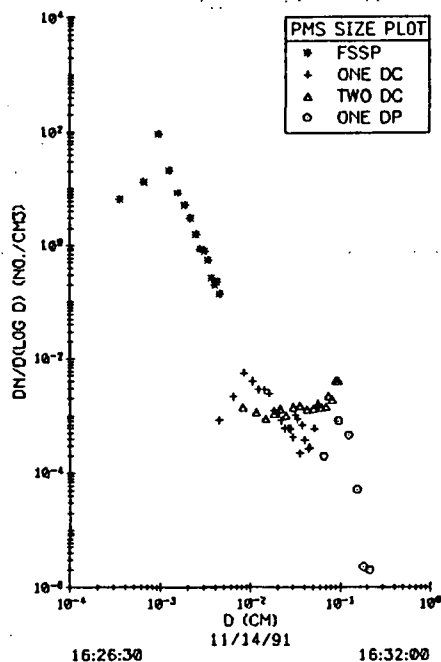
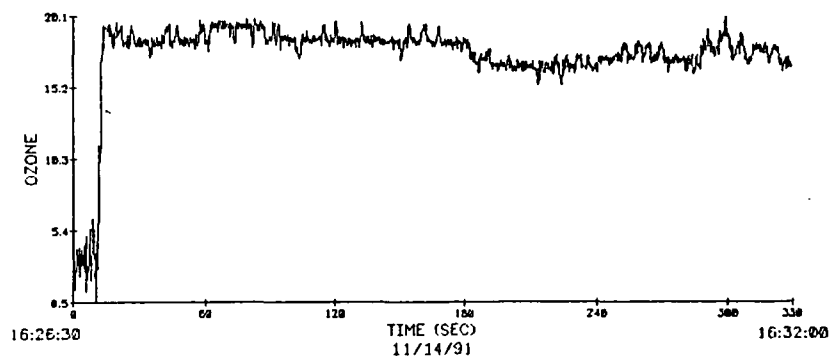
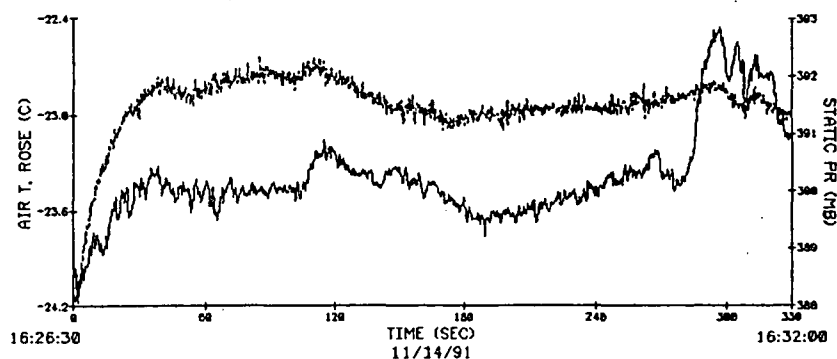
Wind Direction: 233.8 °

Wind Velocity: 31.93 m/sec

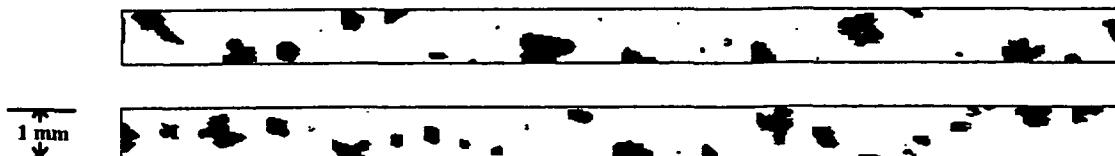
Pressure: 391.50 mb

Pressure Altitude: 7336.4 m

Aircraft Heading: 53.8 °



11/14/91 16:29:36.9018 16:29:41.5123 DeltaT: 0: 4.6105 TAS1 = 105.6 TAS2 = 106.5



11/14/91

16:36:00-16:40:10

Leg # 7a

Averages:

Temperature: -21.3 °C

Dew Point: -21.7 °C

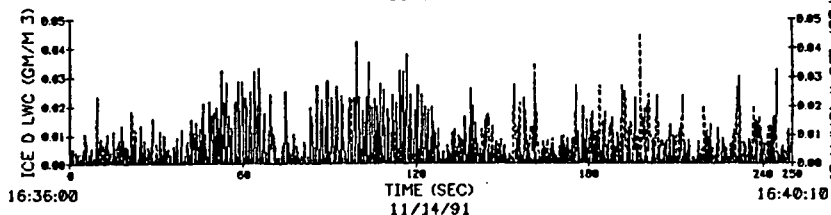
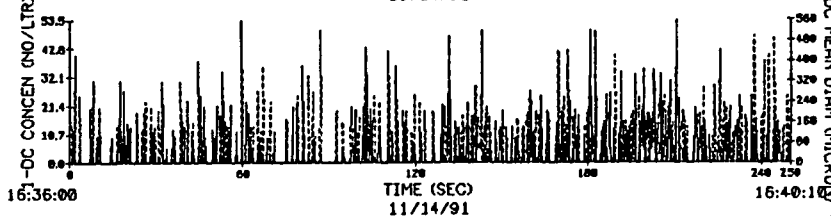
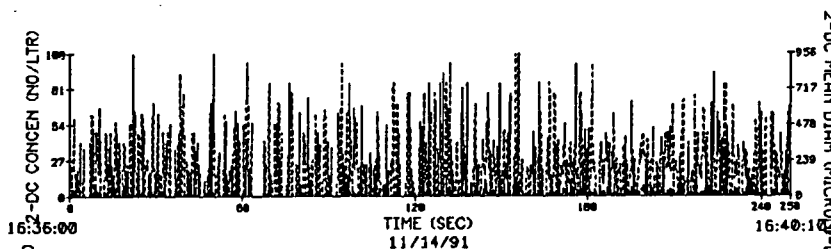
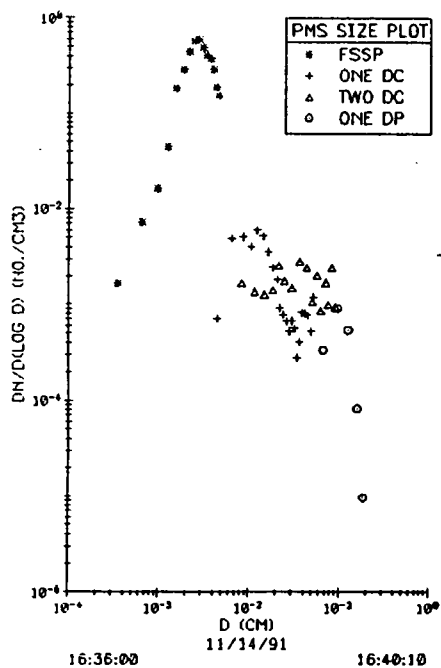
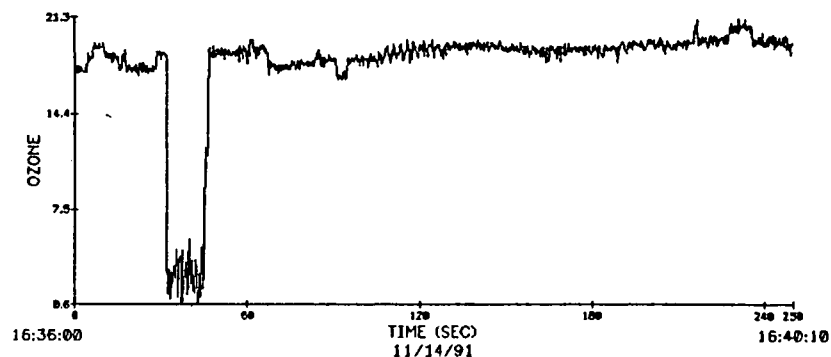
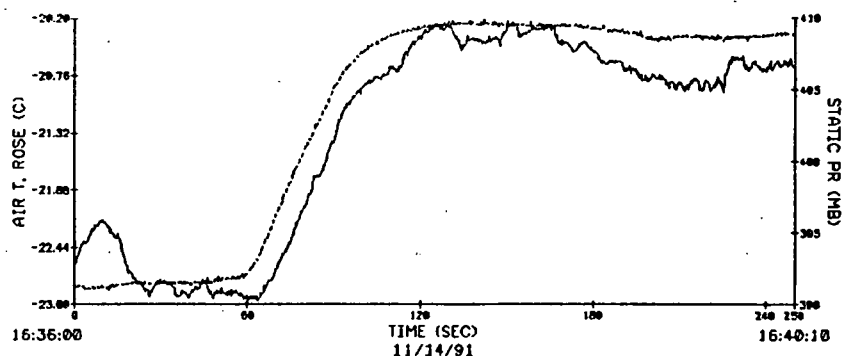
Wind Direction: 232.7 °

Wind Velocity: 32.97 m/sec

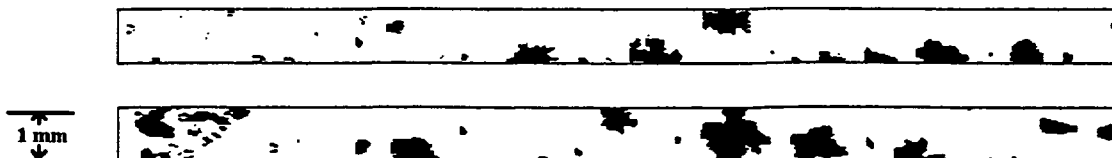
Pressure: 403.64 mb

Pressure Altitude: 7121.9 m

Aircraft Heading: 232.0 °



11/14/91 16:39:15.8854 16:39:18.1910 DeltaT: 0: 2.3056 TAS1 = 97.2 TAS2 = 98.0



11/14/91

16:40:20-16:48:00

Leg # 7b

Averages:

Temperature: -20.7 °C

Dew Point: -21.1 °C

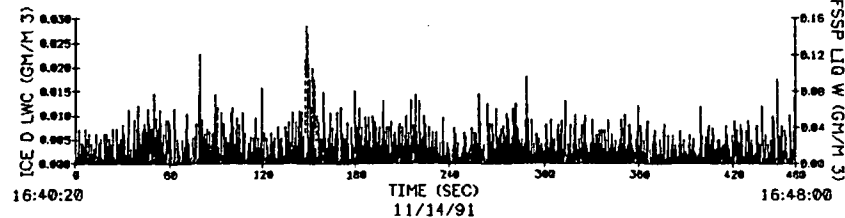
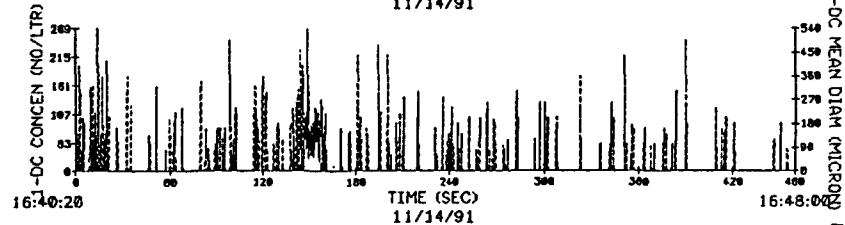
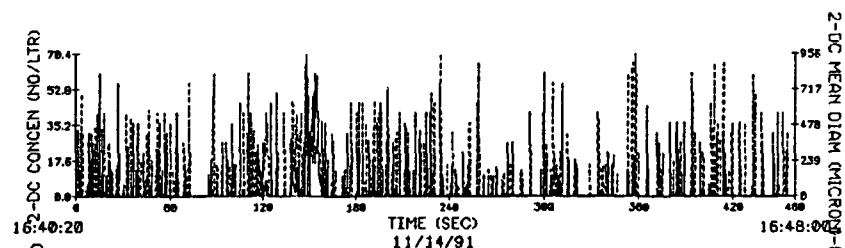
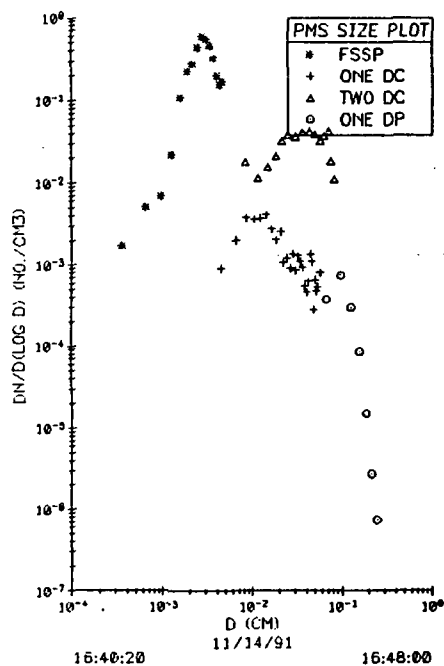
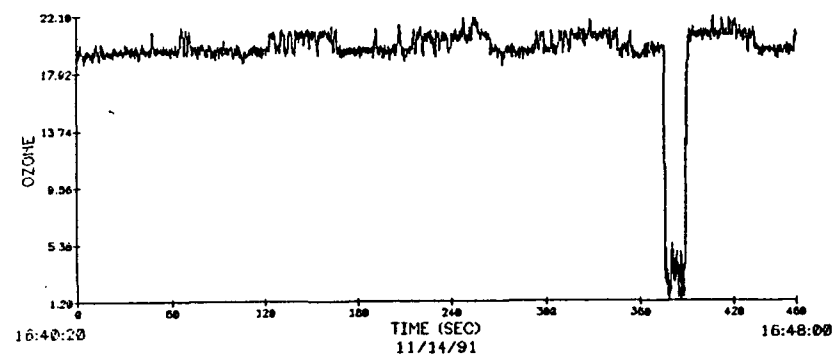
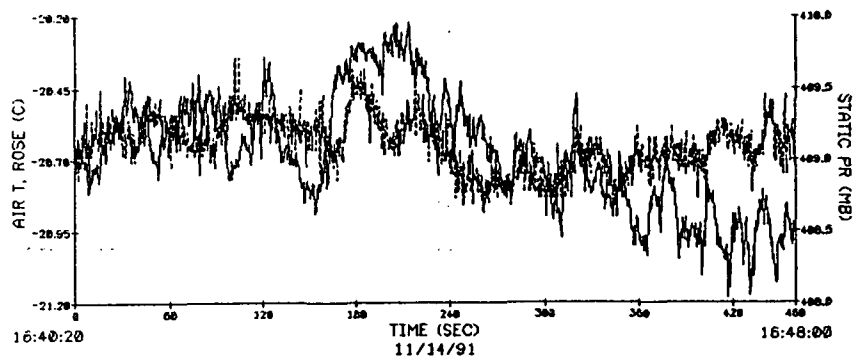
Wind Direction: 230.5 °

Wind Velocity: 33.15 m/sec

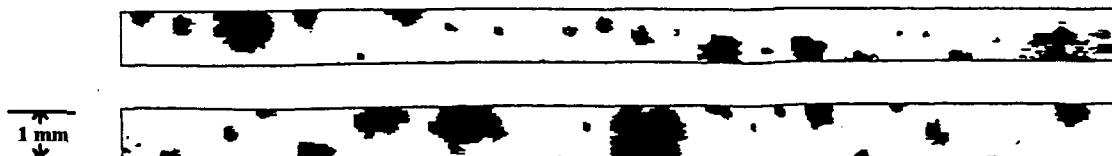
Pressure: 409.12 mb

Pressure Altitude: 7025.3 m

Aircraft Heading: 231.5 °



11/14/91 16:43:00.3630 16:43:20.4705 DeltaT: 0:20.1075 TAS1 = 94.6 TAS2 = 93.9



11/22/91A

01:20:30-01:33:40

Leg # 1

Averages:

Temperature: -45.5 °C

Dew Point: -Not Available

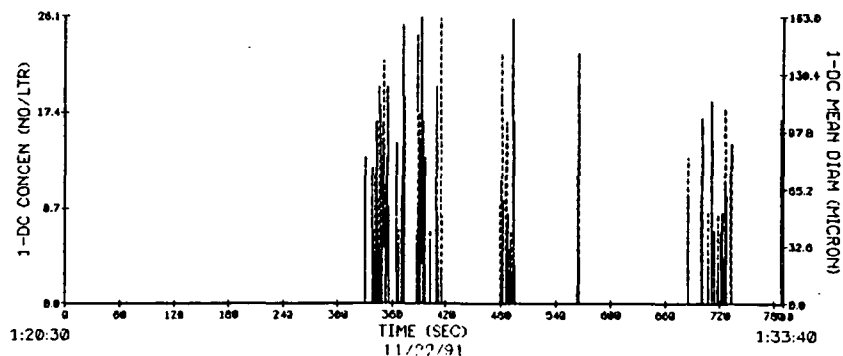
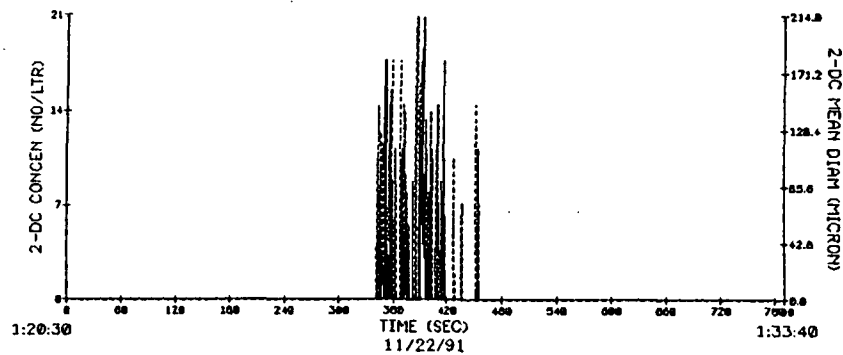
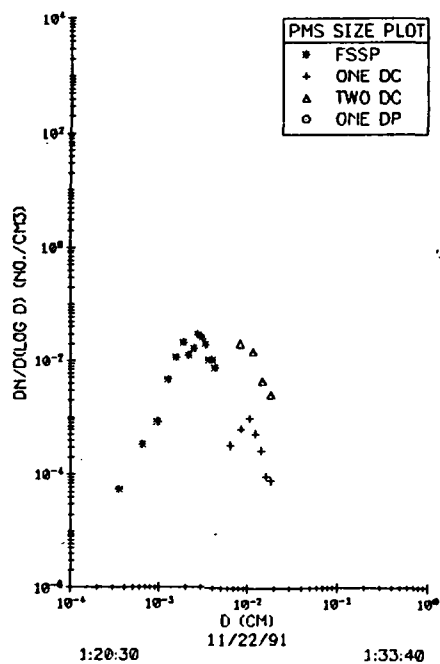
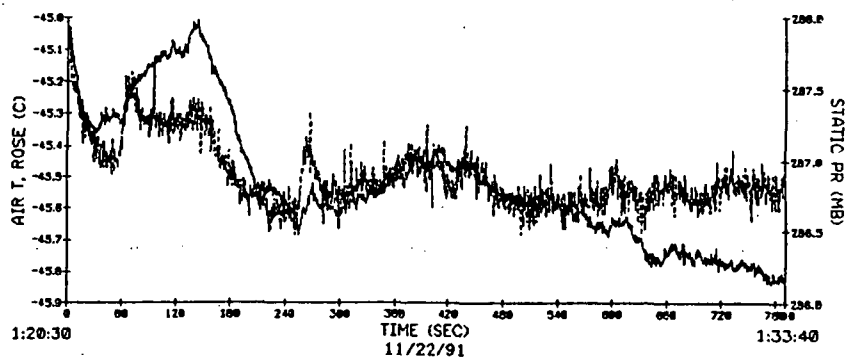
Wind Direction: 270.8 °

Wind Velocity: 28.09 m/sec

Pressure: 286.90 mb

Pressure Altitude: 9460.7 m

Aircraft Heading: 275.3 °



11/22/91

1:28:29.9506

1:31:39.7648

DeltaT: 3: 9.8142

TAS1 = 111.5

TAS2 = 122.0

1 mm

11/22/91A

01:37:00-01:41:15

Leg # 2

Averages:

Temperature: -42.9 °C

Dew Point: -43.1 °C

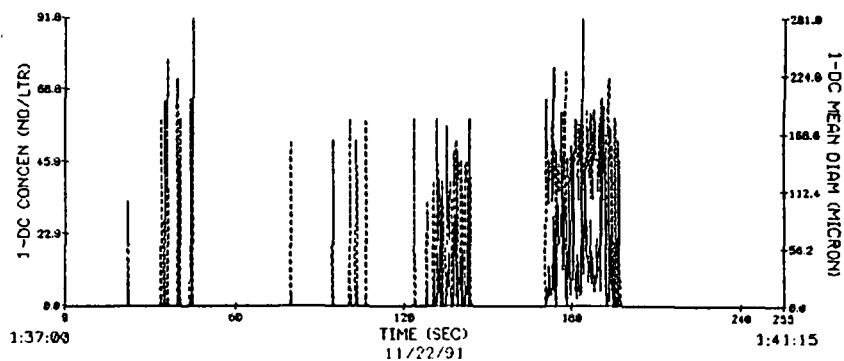
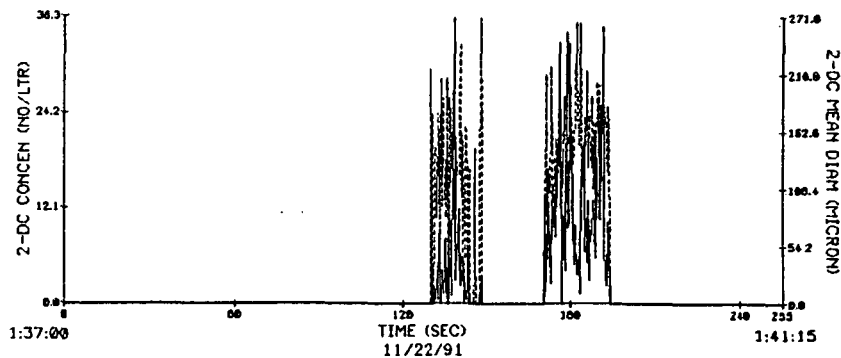
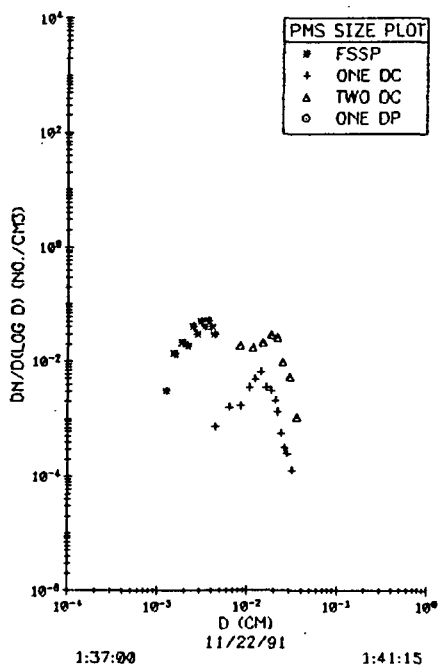
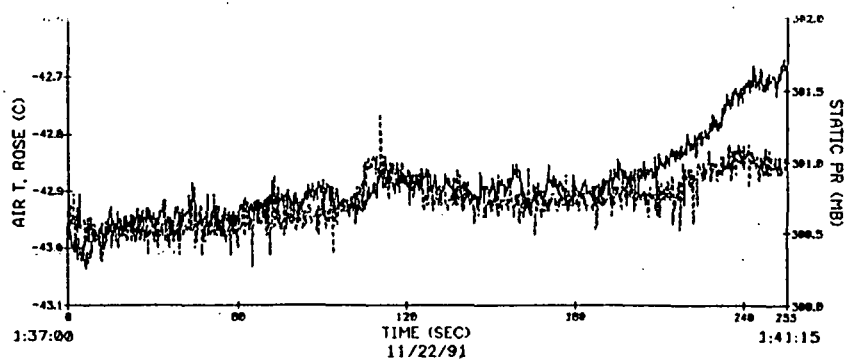
Wind Direction: 273.1 °

Wind Velocity: 25.63 m/sec

Pressure: 300.73 mb

Pressure Altitude: 9147.0 m

Aircraft Heading: 97.9 °



11/22/91

1:39:58.6643

1:39:59.5242

DeltaT: 0: 0.8599

TAS1 = 120.3

TAS2 = 120.3

1 mm

11/22/91A

01:44:00-01:52:30

Leg # 3

Averages:

Temperature: -40.2 °C

Dew Point: -41.4 °C

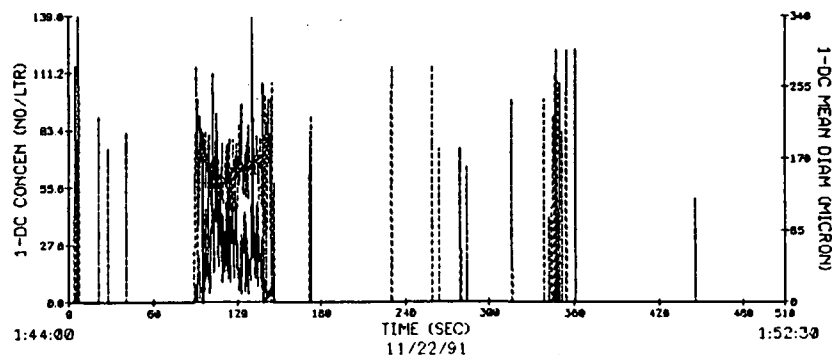
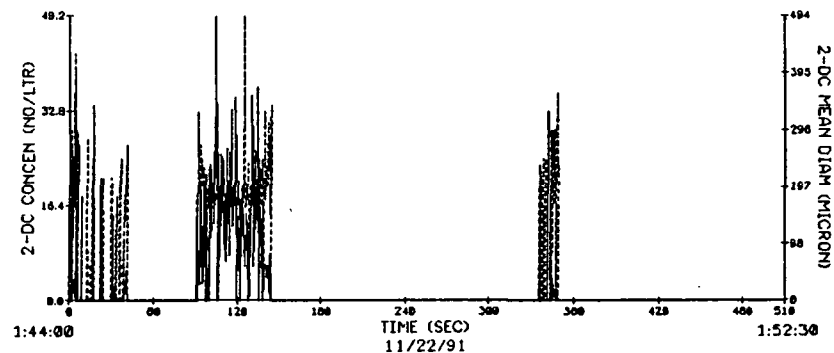
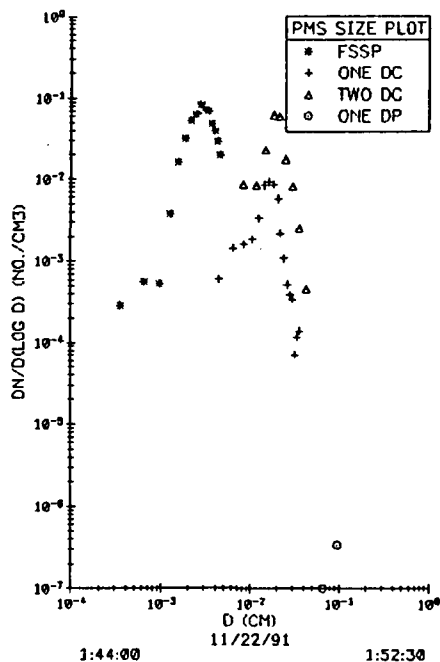
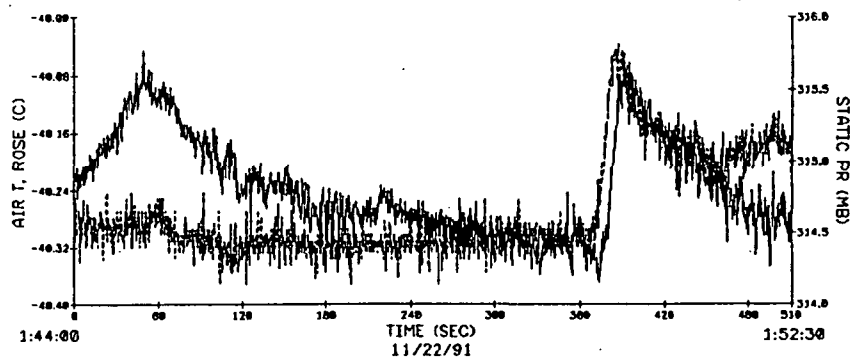
Wind Direction: 266.0 °

Wind Velocity: 25.75 m/sec

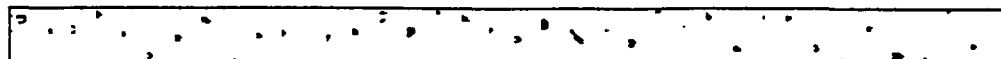
Pressure: 314.66 mb

Pressure Altitude: 8842.5 m

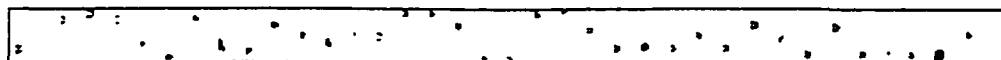
Aircraft Heading: 274.0 °



11/22/91 1:45:55.0262 1:45:55.7470 DeltaT: 0: 0.7208 TAS1 = 110.3 TAS2 = 110.3



1 mm



11/22/91A

01:56:00-02:00:50

Leg # 4

Averages:

Temperature: -37.7 °C

Dew Point: -39.0 °C

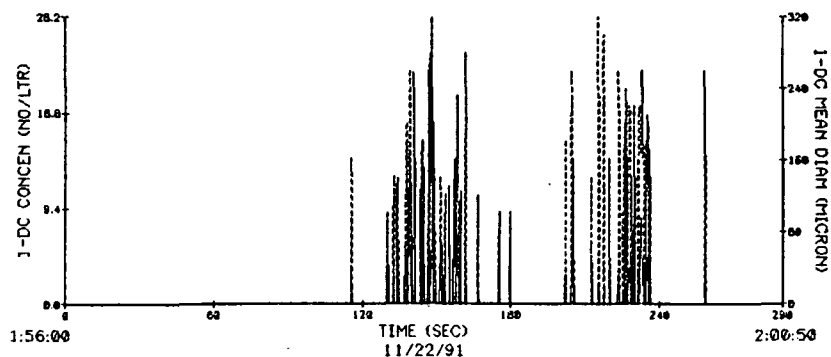
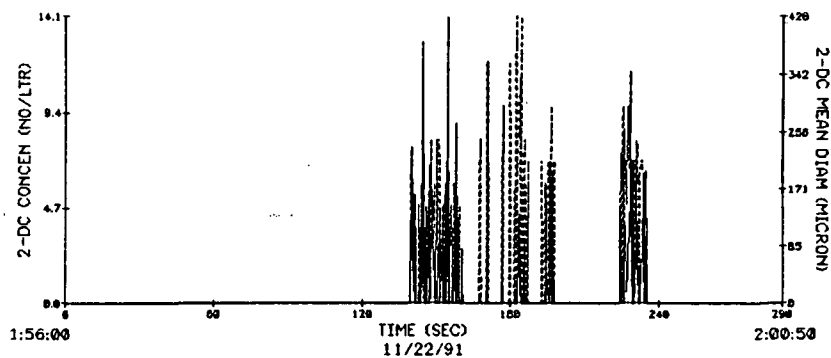
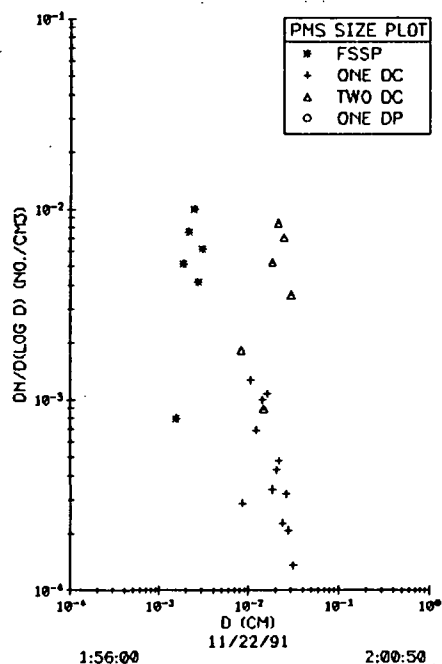
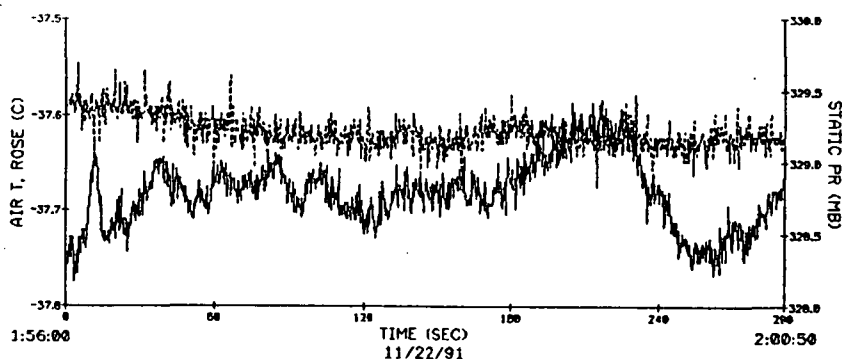
Wind Direction: 264.6 °

Wind Velocity: 24.29 m/sec

Pressure: 329.22 mb

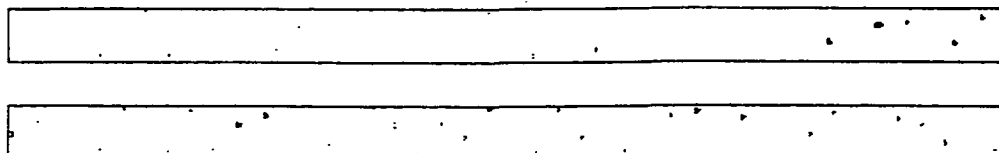
Pressure Altitude: 8536.0 m

Aircraft Heading: 100.5 °



11/22/91 1:55:27.0884 1:58:18.8063 DeltaT: 2:51.7179 TAS1 = 112.8 TAS2 = 106.5

1 mm



11/22/91A

02:04:00-02:12:00

Leg # 5

Averages:

Temperature: -35.6 °C

Dew Point: -36.4 °C

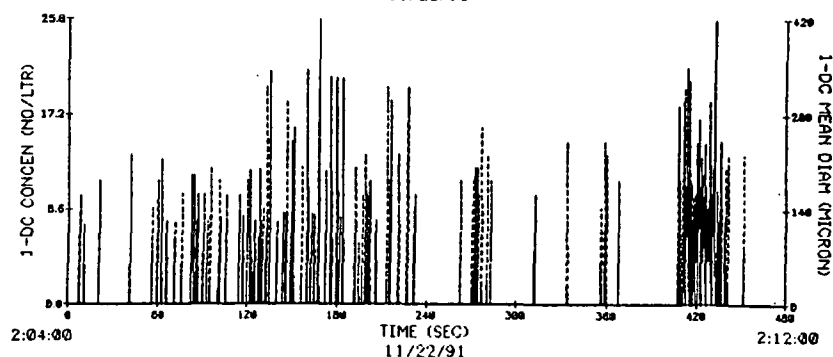
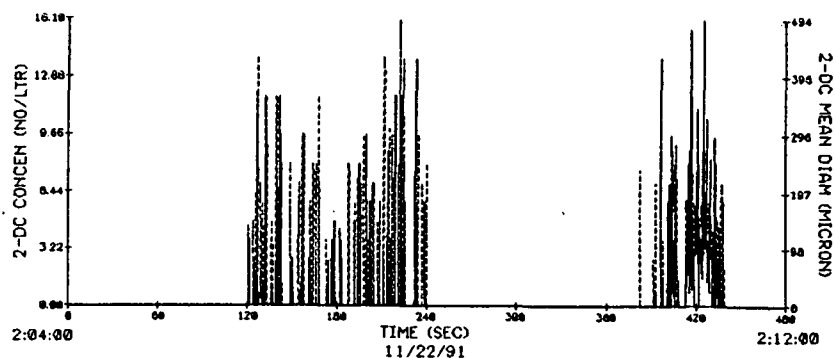
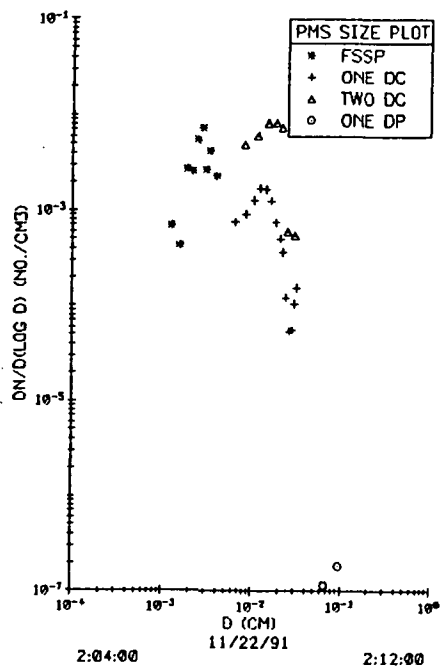
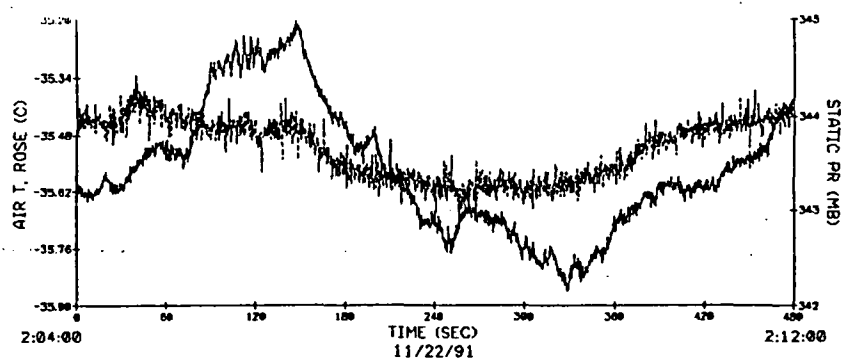
Wind Direction: 256.5 °

Wind Velocity: 25.87 m/sec

Pressure: 343.66 mb

Pressure Altitude: 8242.4 m

Aircraft Heading: 272.9 °



11/22/91

2:06:00.5588

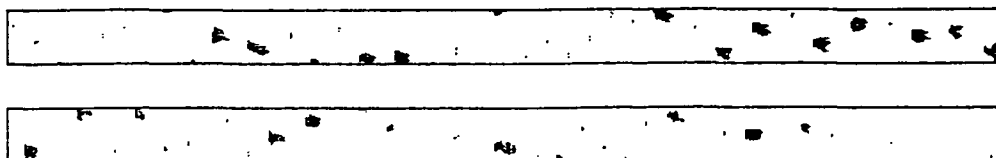
2:06:34.4401

DeltaT: 0:33.8813

TAS1 = 100.4

TAS2 = 97.6

1 mm



11/22/91A

02:15:00-02:19:40

Leg # 6

Averages:

Temperature: -32.8 °C

Dew Point: -34.5 °C

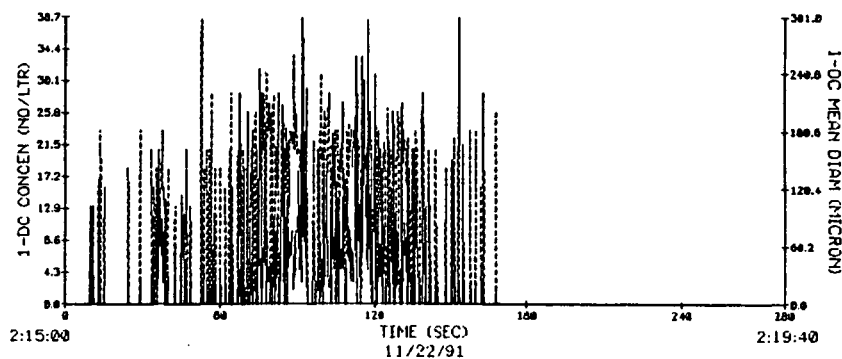
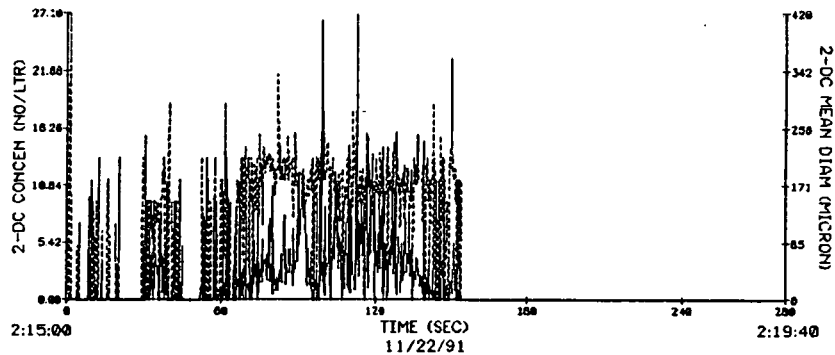
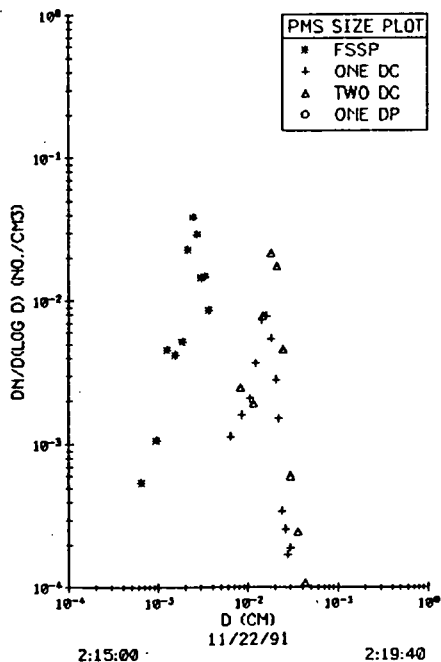
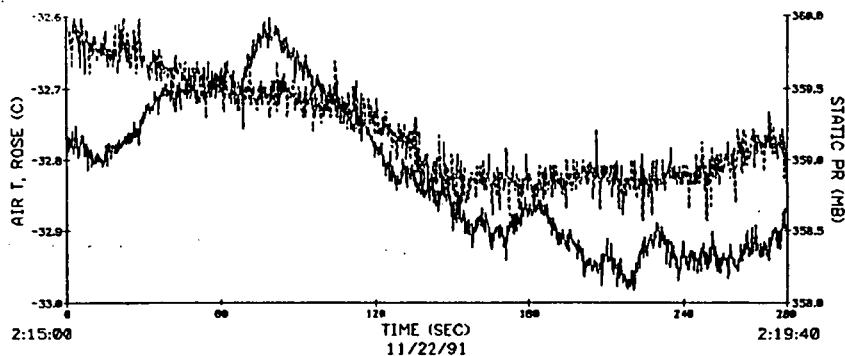
Wind Direction: 260.9 °

Wind Velocity: 24.52 m/sec

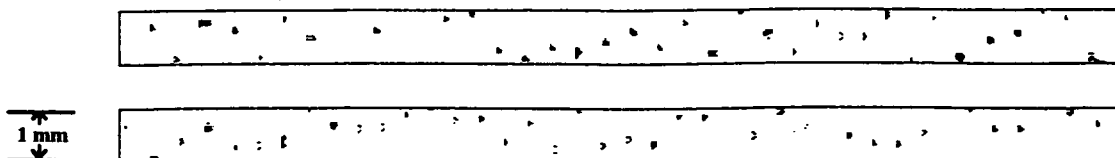
Pressure: 359.20 mb

Pressure Altitude: 7937.5 m

Aircraft Heading: 100.4 °



11/22/91 2:17:19.2760 2:17:34.1492 DeltaT: 0:14.8732 TAS1 = 101.0 TAS2 = 103.8



11/22/91A

02:24:00-02:30:35

Leg # 7

Averages:

Temperature: -33.0 °C

Dew Point: -34.2 °C

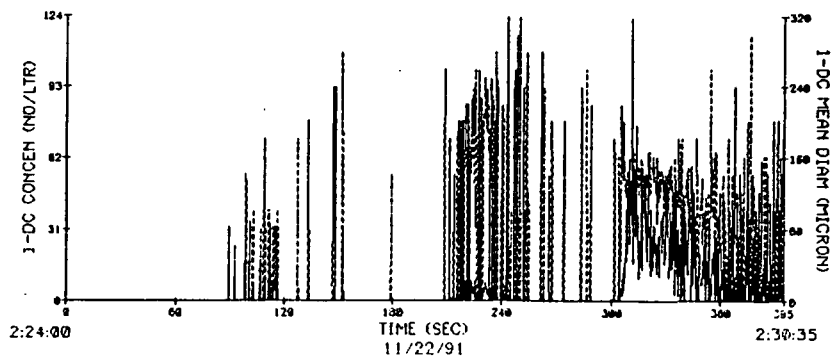
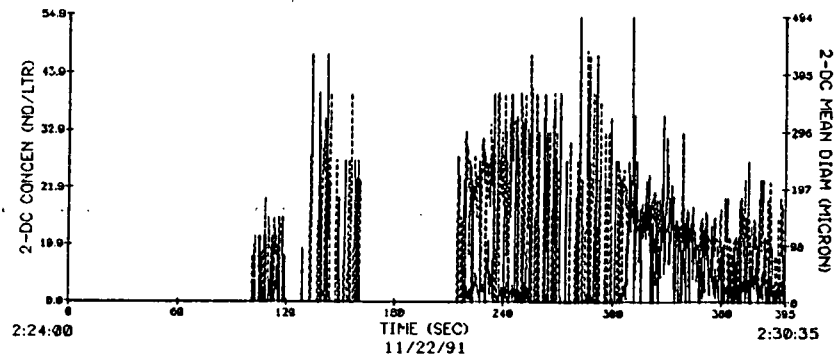
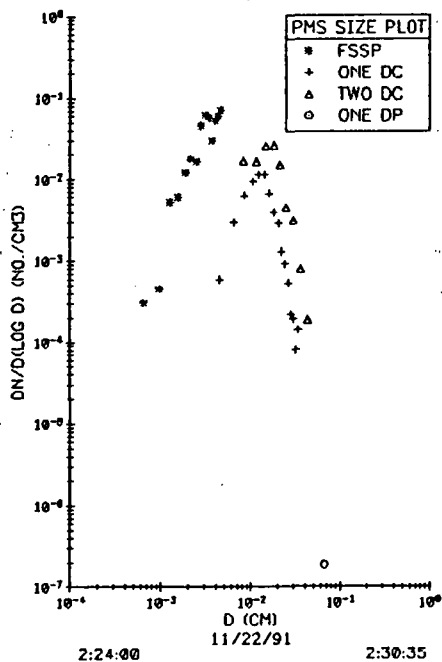
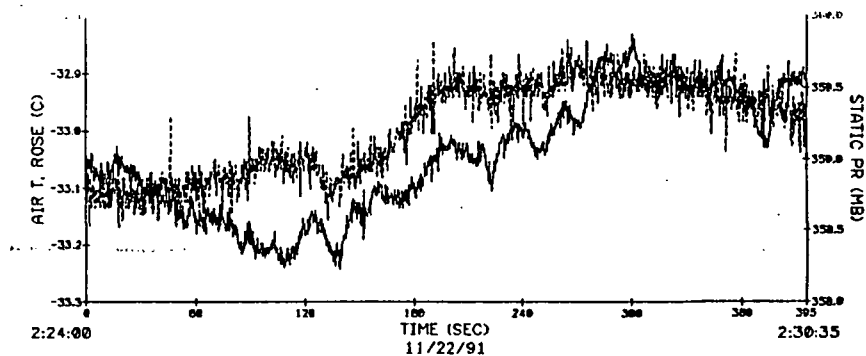
Wind Direction: 256.3 °

Wind Velocity: 26.37 m/sec

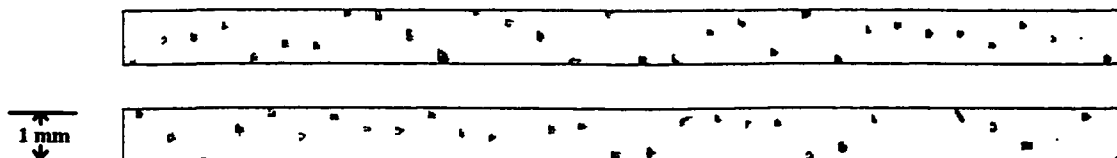
Pressure: 359.22 mb

Pressure Altitude: 7937.2 m

Aircraft Heading: 270.3 °



11/22/91 2:27:51.9171 2:27:54.0396 DeltaT: 0: 2.1225 TAS1 = 128.4 TAS2 = 128.0



11/22/91A

02:34:10-02:38:45

Leg # 8

Averages:

Temperature: -35.3 °C

Dew Point: -36.6 °C

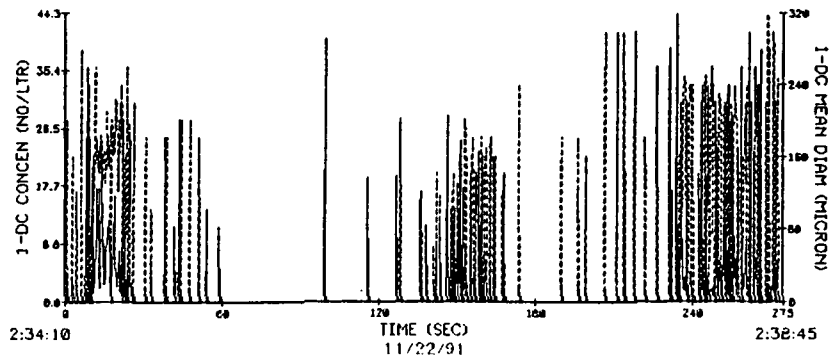
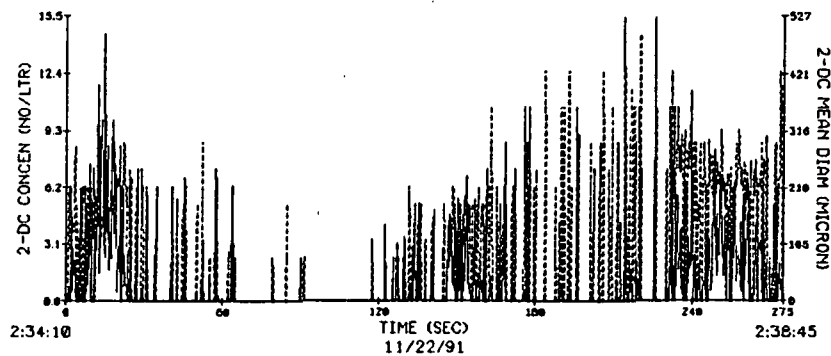
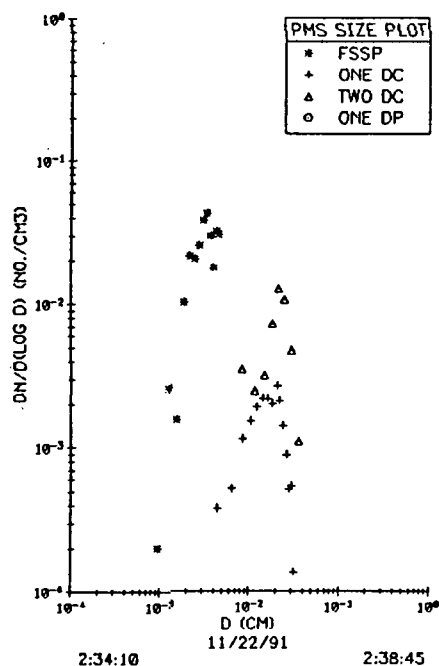
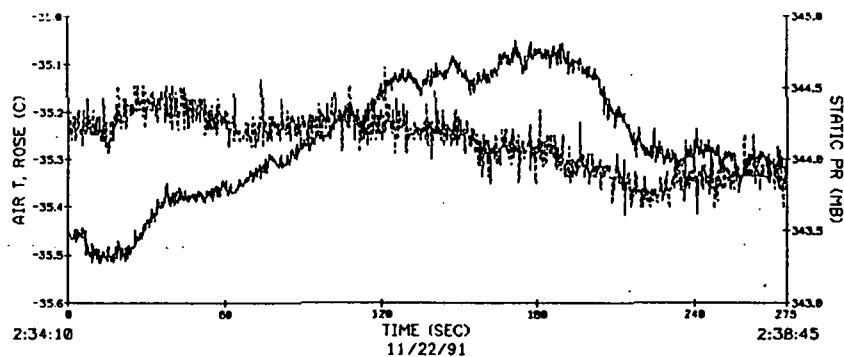
Wind Direction: 260.4 °

Wind Velocity: 24.49 m/sec

Pressure: 344.12 mb

Pressure Altitude: 8233.3 m

Aircraft Heading: 98.5 °



11/22/91

2:34:22.6867

2:34:24.3484

DeltaT: 0: 1.6617

TAS1 = 128.4

TAS2 = 128.1

1 mm

11/22/91A

02:42:00-02:50:00

Leg # 9

Averages:

Temperature: -37.6 °C

Dew Point: -39.8 °C

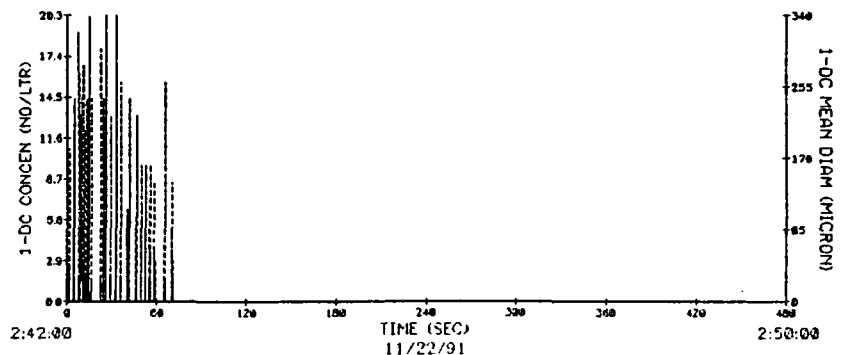
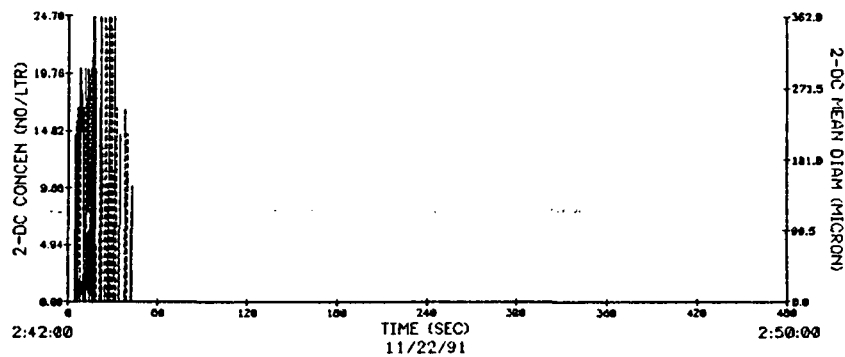
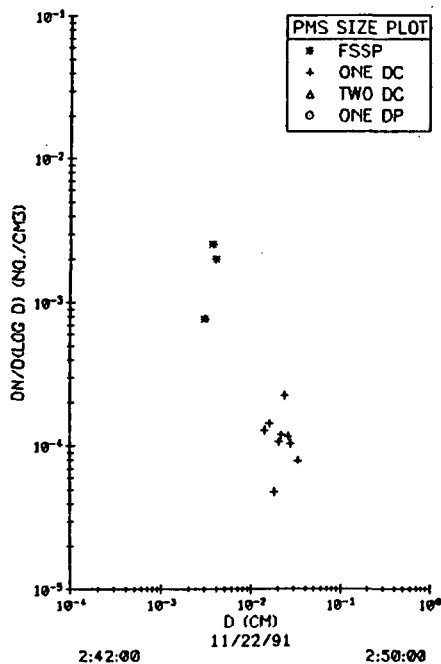
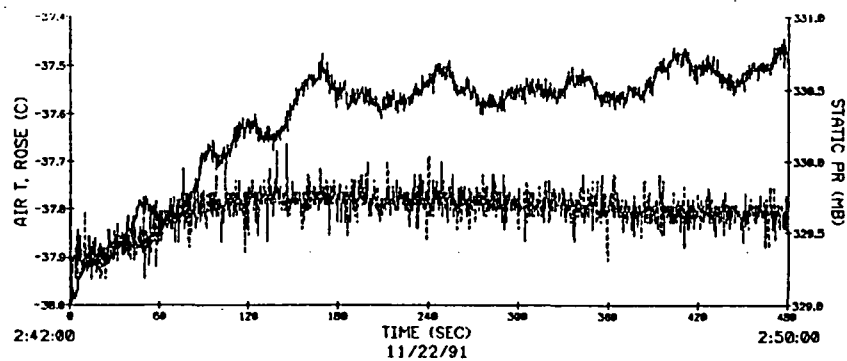
Wind Direction: 260.9 °

Wind Velocity: 27.21 m/sec

Pressure: 329.66 mb

Pressure Altitude: 8526.8 m

Aircraft Heading: 272.6 °



11/22/91

2:42:13.5337

2:42:46.1243

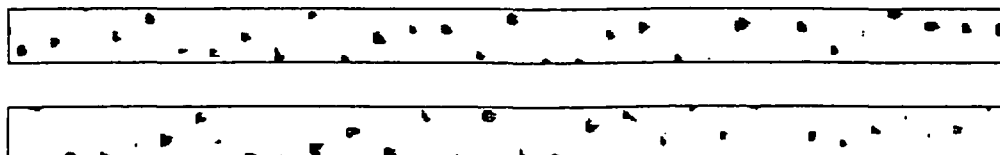
DeltaT:

0:32.5906

TAS1 = 125.3

TAS2 = 122.5

1 mm



11/22/91A

02:55:05-02:57:10

Leg # 10

Averages:

Temperature: -37.9 °C

Dew Point: Not Available

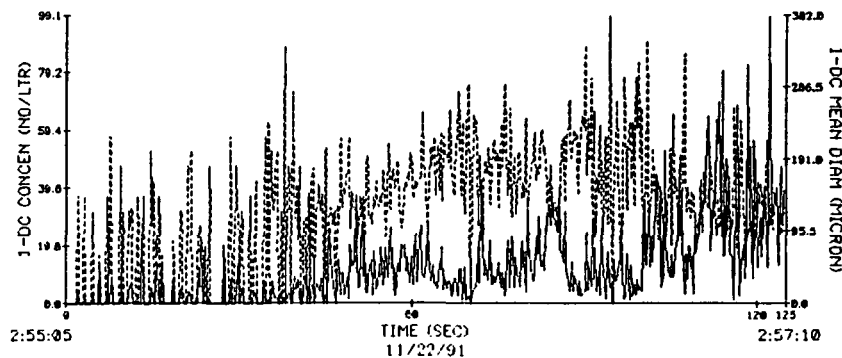
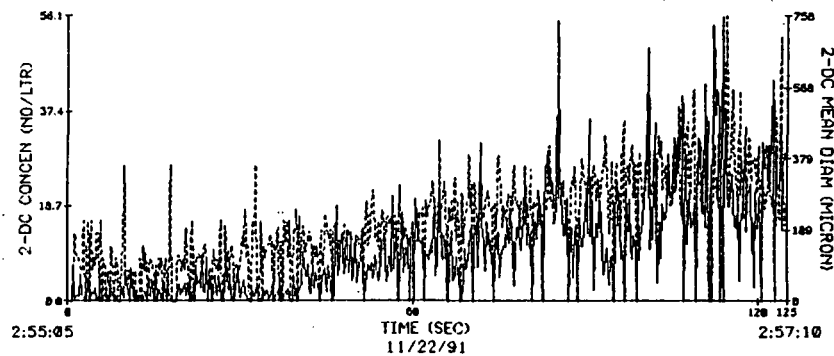
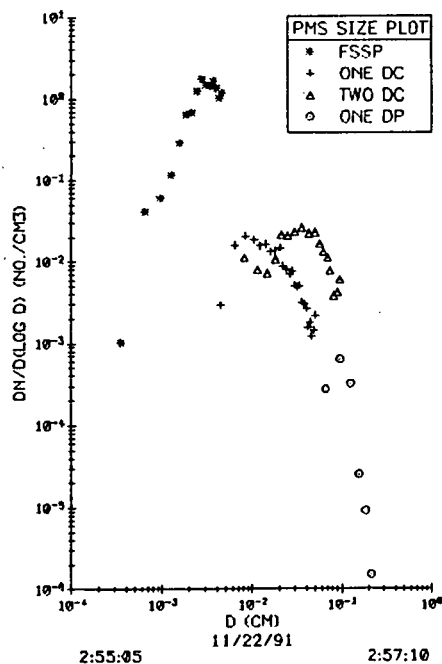
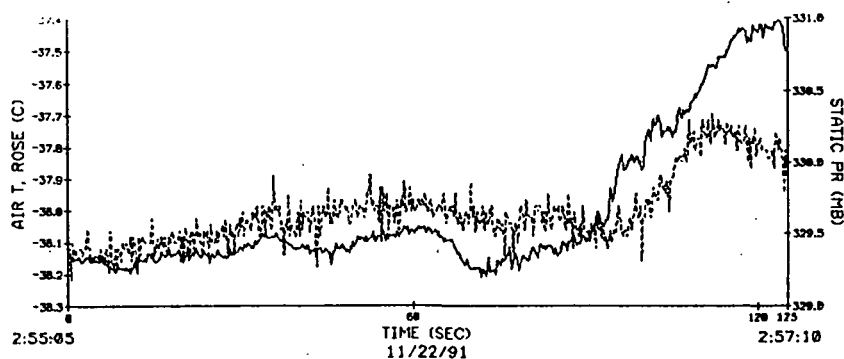
Wind Direction: 254.8 °

Wind Velocity: 28.60 m/sec

Pressure: 329.70 mb

Pressure Altitude: 8525.9 m

Aircraft Heading: 325.2 °



11/22/91

2:56:52.7308

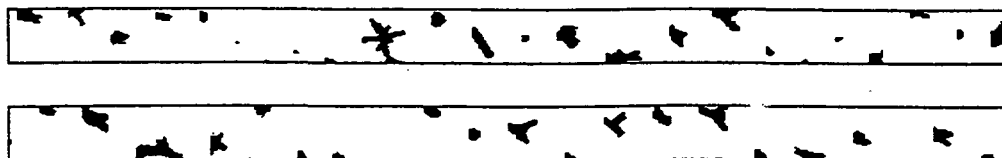
2:56:52.9911

DeltaT: 0: 0.2603

TAS1 = 142.8

TAS2 = 142.8

1 mm



11/22/91A

02:58:10-03:03:30

Leg # 11

Averages:

Temperature: -42.5 °C

Dew Point: Not Available

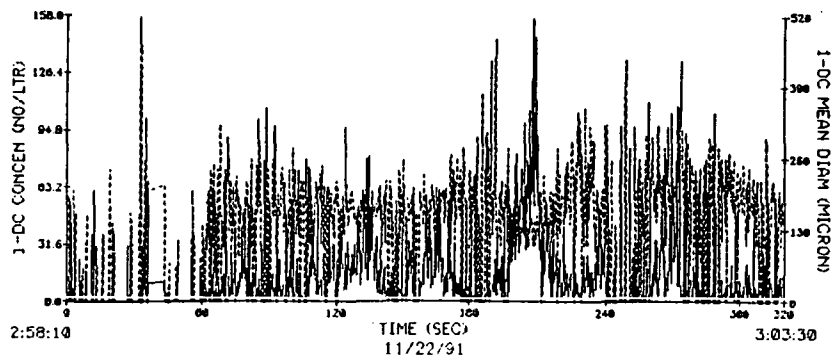
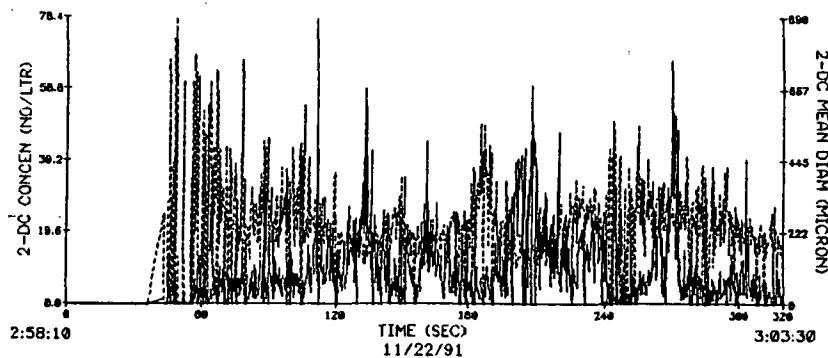
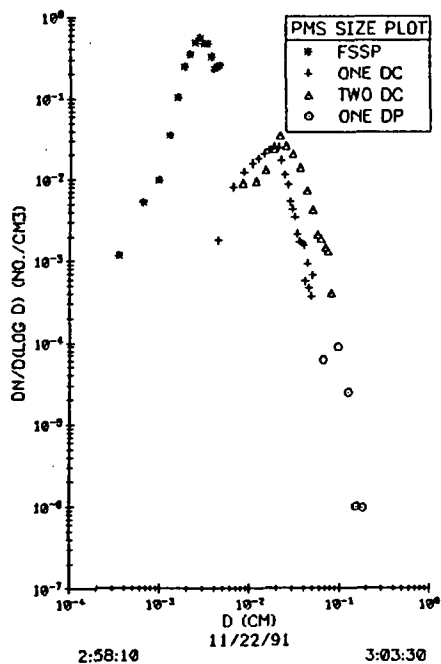
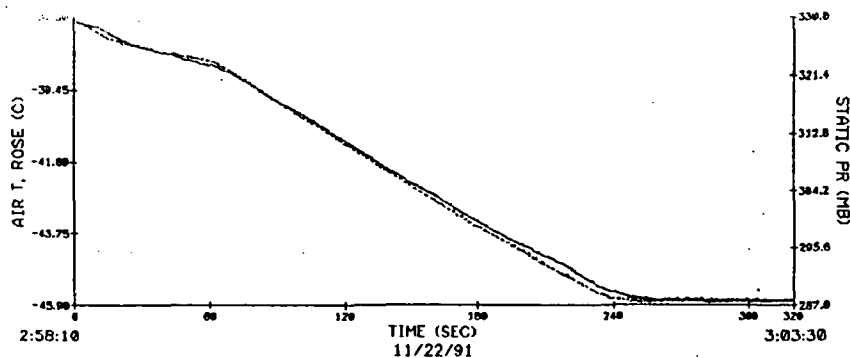
Wind Direction: 260.8 °

Wind Velocity: 28.99 m/sec

Pressure: 303.79 mb

Pressure Altitude: 9085.2 m

Aircraft Heading: 258.2 °



11/22/91

3:02:06.8513

3:02:07.2815

DeltaT: 0:0:4302

TAS1 = 110.6

TAS2 = 110.6

1 mm

11/22/91A

03:04:15-03:13:10

Leg # 12

Averages:

Temperature: -52.1 °C

Dew Point: Not Available

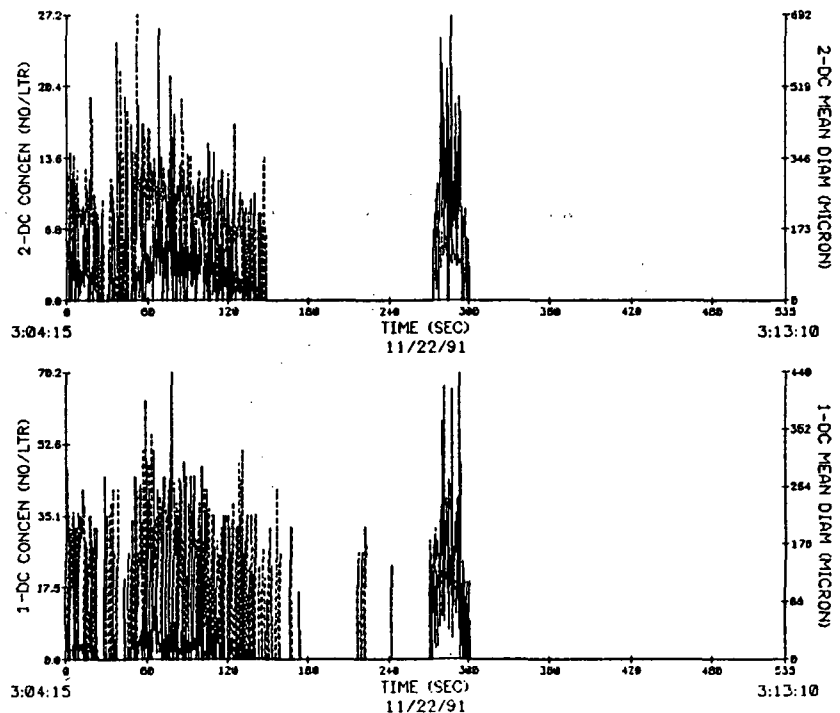
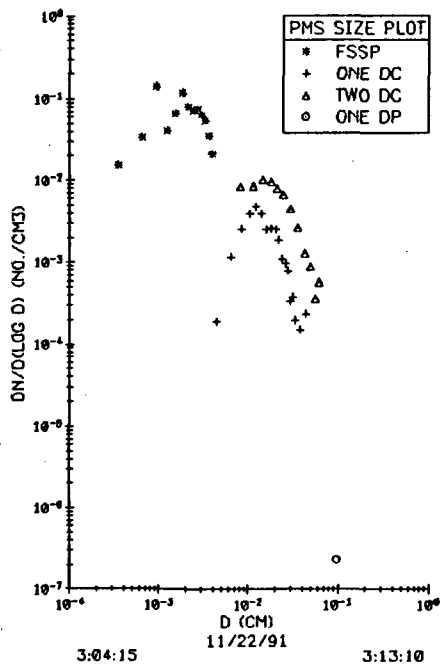
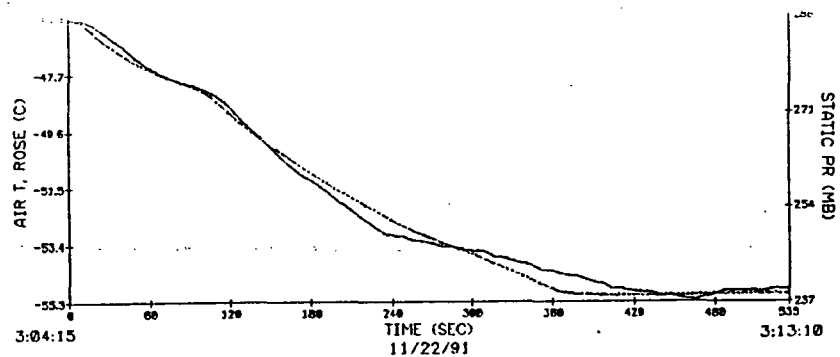
Wind Direction: 268.5 °

Wind Velocity: 32.50 m/sec

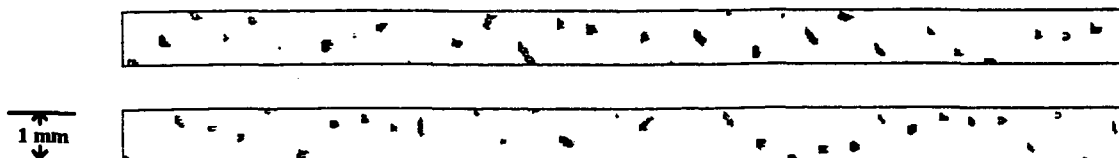
Pressure: 253.64 mb

Pressure Altitude: 10278.7 m

Aircraft Heading: 92.8 °



11/22/91 3:05:18.2215 3:05:21.0698 DeltaT: 0: 2.8483 TAS1 = 106.8 TAS2 = 107.0



11/22/91A

03:26:00-03:27:30

Leg # 13

Averages:

Temperature: -53.9 °C

Dew Point: Not Available

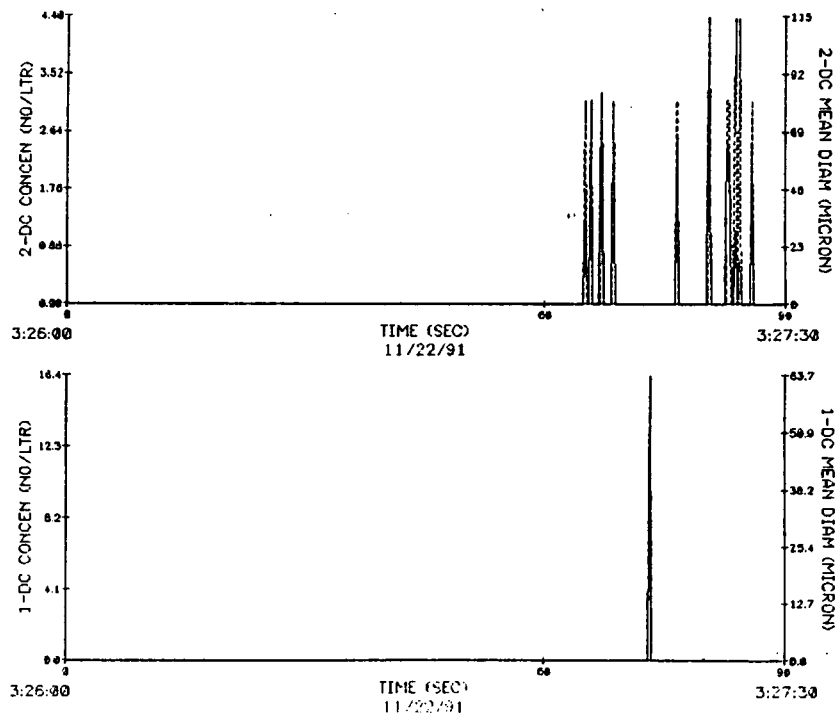
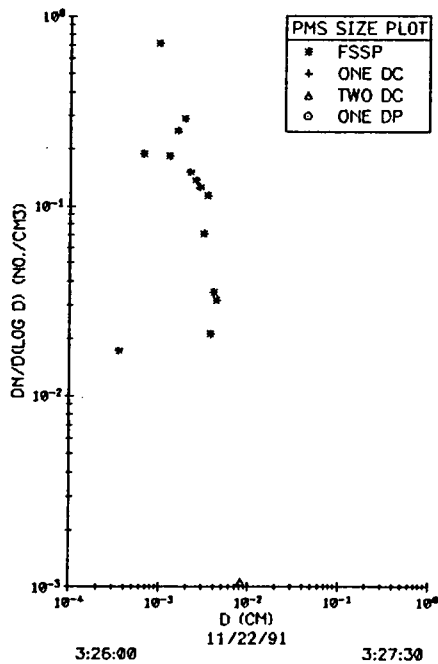
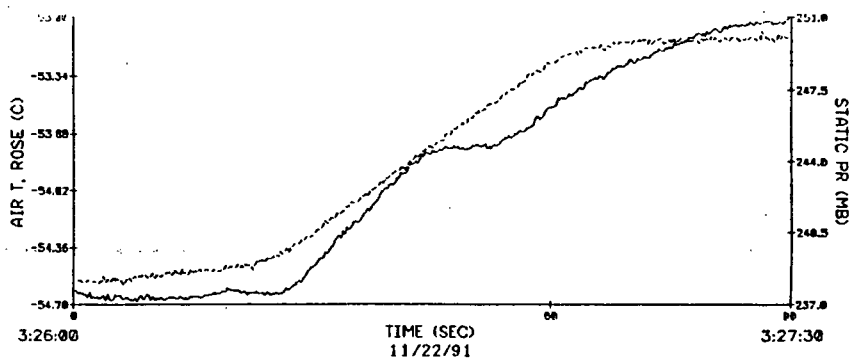
Wind Direction: 265.6 °

Wind Velocity: 37.16 m/sec

Pressure: 244.76 mb

Pressure Altitude: 10499.7 m

Aircraft Heading: 261.4 °



11/22/91

3:27:04.1036

3:27:08.5630

DeltaT:

0: 4.4594

TAS1 = 127.6

TAS2 = 127.7

1 mm

11/22/91A

03:30:45-03:32:50

Leg # 14

Averages:

Temperature: -53.3 °C

Dew Point: Not Available

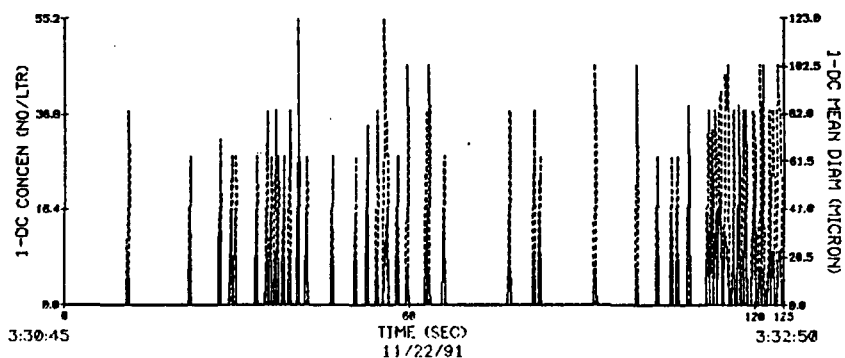
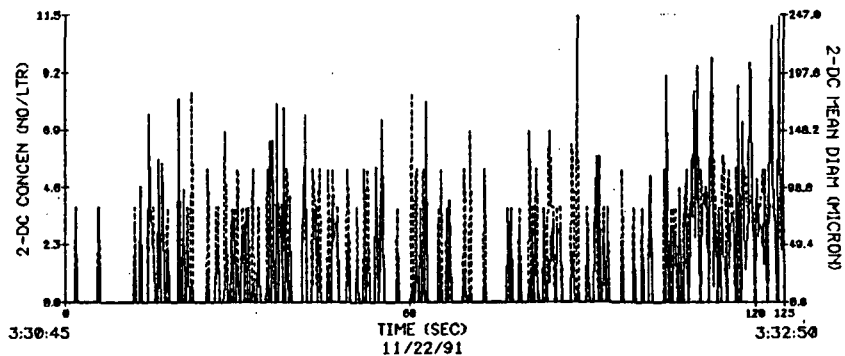
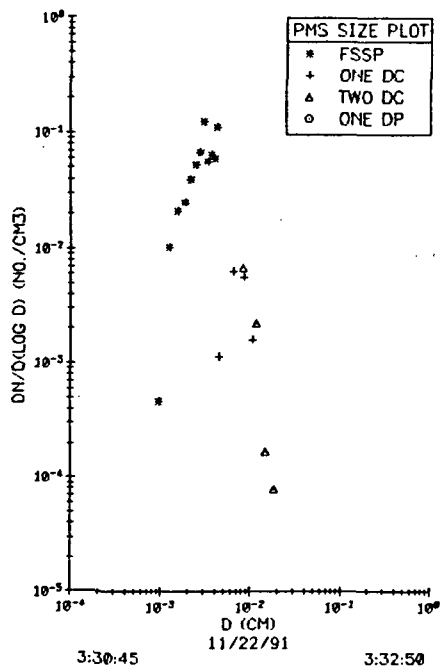
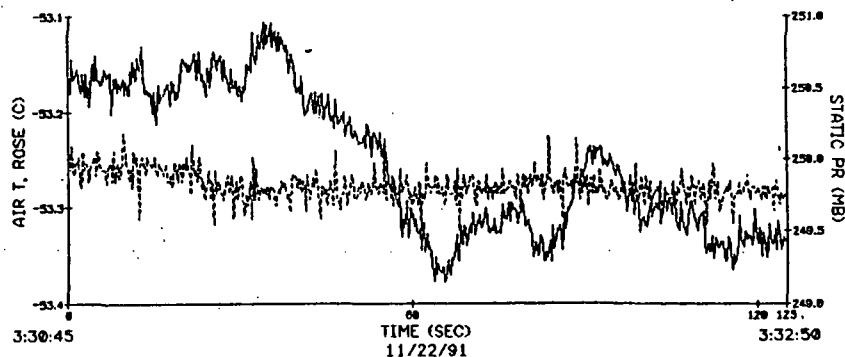
Wind Direction: 269.6 °

Wind Velocity: 34.32 m/sec

Pressure: 249.81 mb

Pressure Altitude: 10366.9 m

Aircraft Heading: 63.4 °



11/22/91 3:31:32.8068 3:31:38.0145 DeltaT: 0: 5.2077 TAS1 = 120.5 TAS2 = 120.4

1 mm

11/22/91A

03:36:40-03:45:50

Leg # 15

Averages:

Temperature: -53.4 °C

Dew Point: Not Available

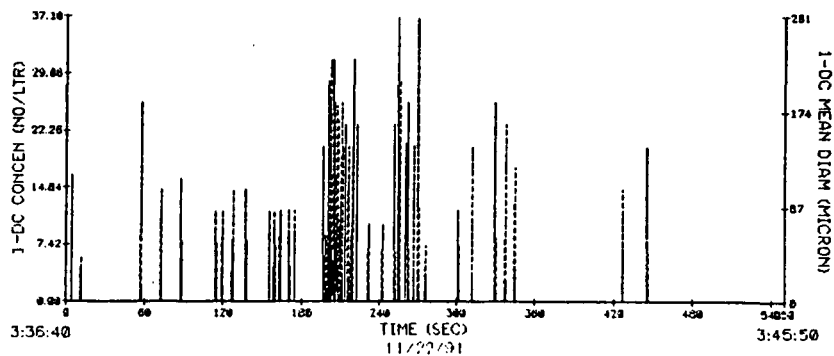
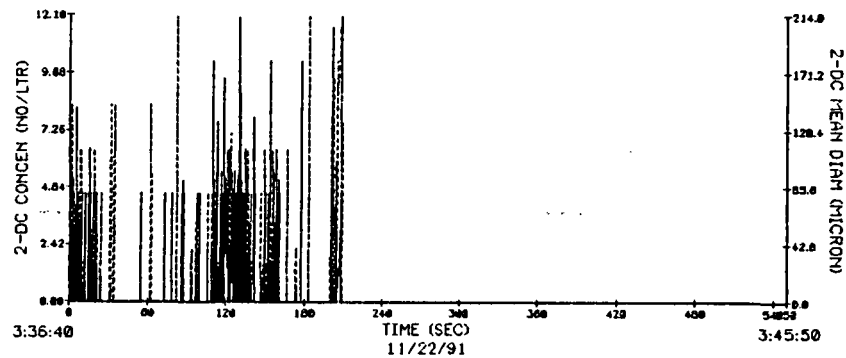
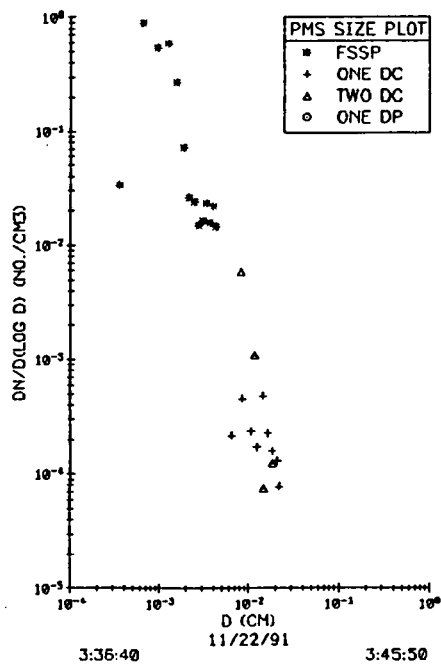
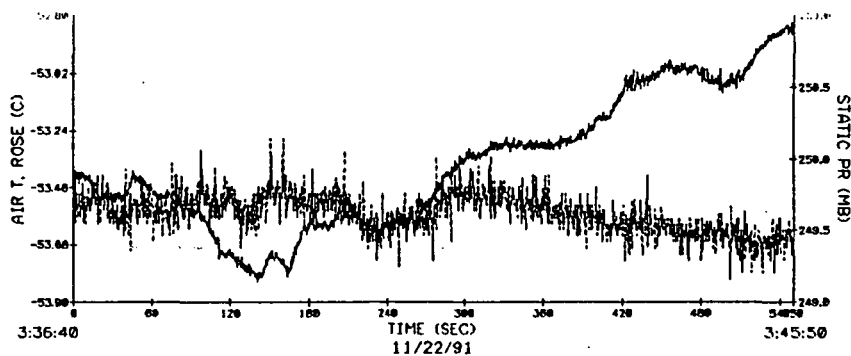
Wind Direction: 264.6 °

Wind Velocity: 36.10 m/sec

Pressure: 249.62 mb

Pressure Altitude: 10371.9 m

Aircraft Heading: 261.6 °



11/22/91

3:38:34.0917

3:38:37.6695

DeltaT: 0: 3.5778

TAS1 = 130.0

TAS2 = 129.9

1 mm

11/22/91A

03:48:35-03:54:30

Leg # 16

Averages:

Temperature: -50.9 °C

Dew Point: Not Available

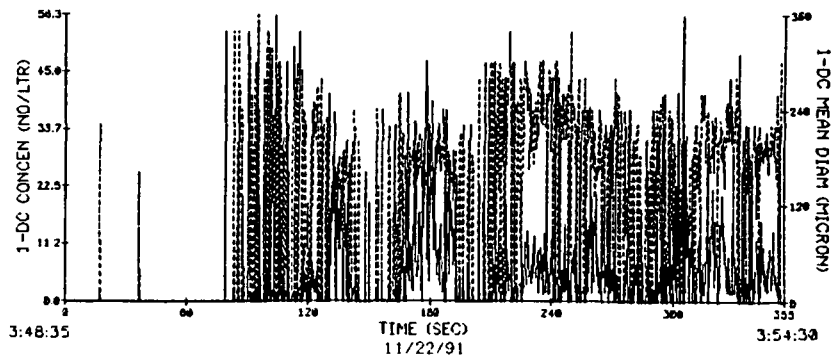
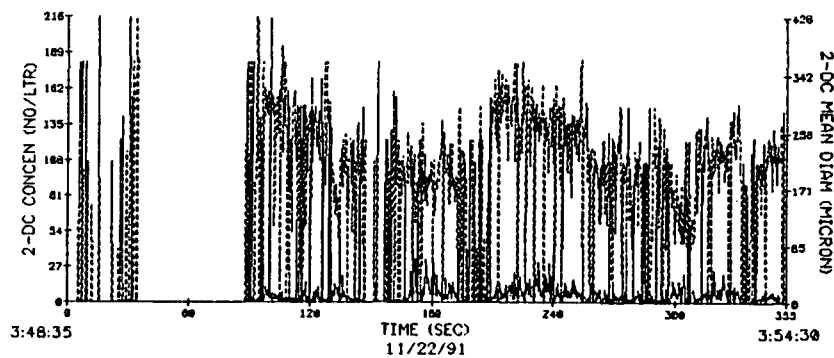
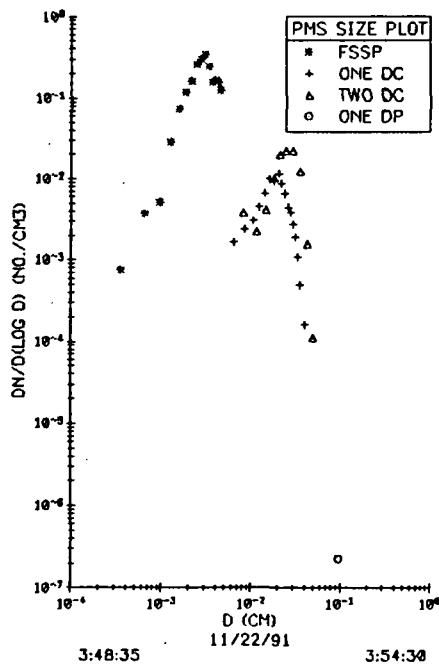
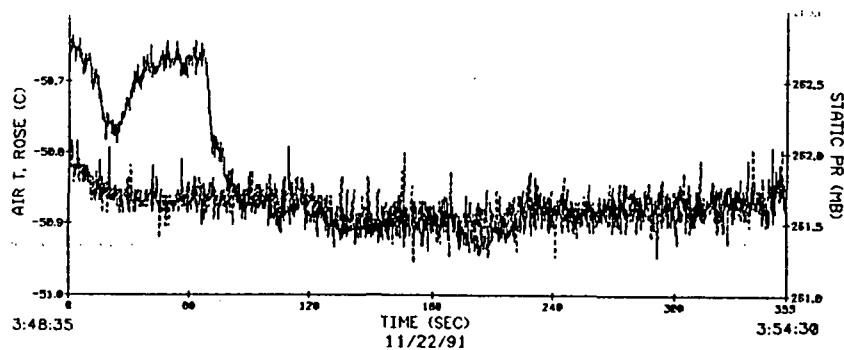
Wind Direction: 266.3 °

Wind Velocity: 32.56 m/sec

Pressure: 261.62 mb

Pressure Altitude: 10067.1 m

Aircraft Heading: 80.4 °



11/22/91

3: 52: 45. 3036

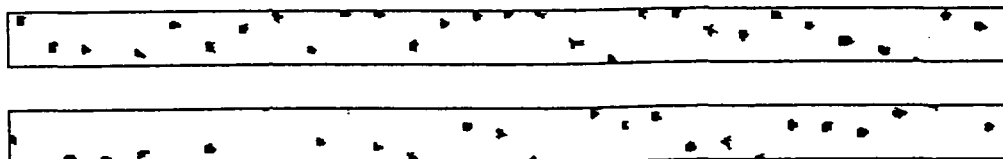
3: 52: 45. 9896

DeltaT: 0: 0. 6860

TAS1 = 118. 0

TAS2 = 118. 0

1 mm



11/22/91A

03:56:00-04:13:10

Leg # 17

Averages:

Temperature: -34.5 °C

Dew Point: Not Available

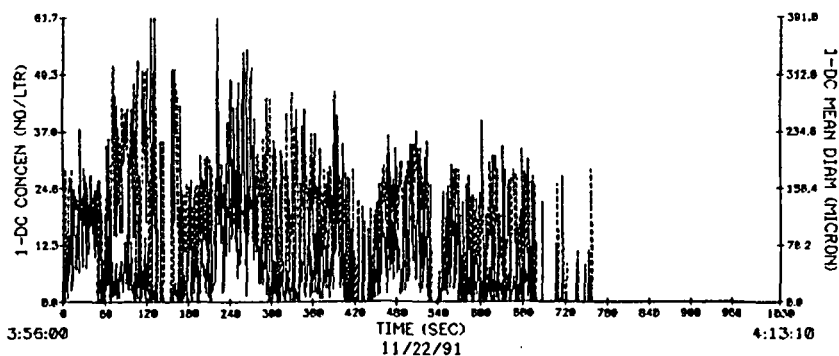
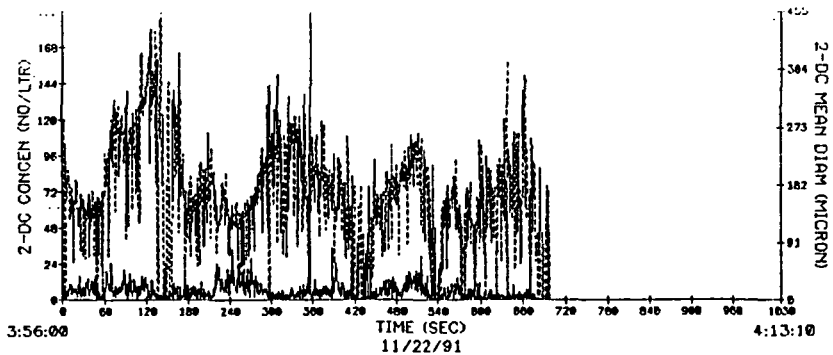
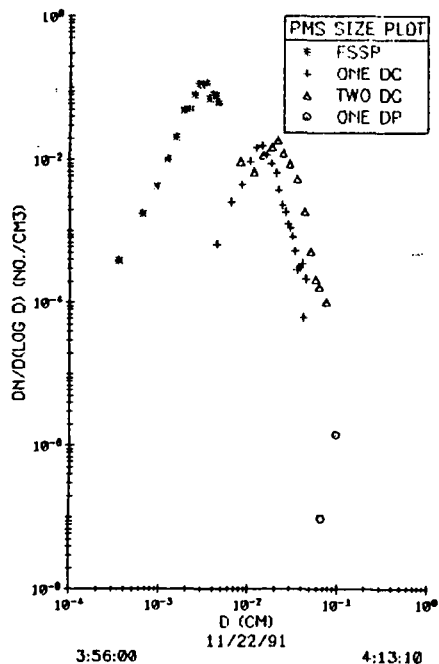
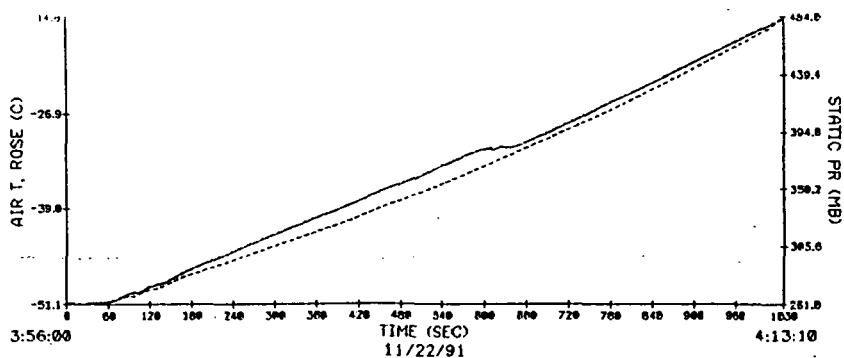
Wind Direction: 253.0 °

Wind Velocity: 24.84 m/sec

Pressure: 356.61 mb

Pressure Altitude: 8083.8 m

Aircraft Heading: 182.4 °



11/22/91

4:06:37.4321

4:06:41.4231

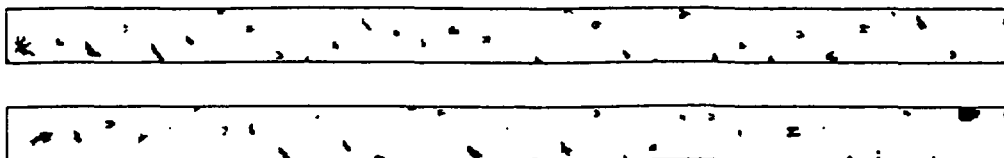
DeltaT:

0: 3.9910

TAS1 = 116.1

TAS2 = 116.6

1 mm



11/22/91

18:30:40-18:34:20

Leg # 1

Averages:

Temperature: -37.2 °C

Dew Point: -51.6 °C

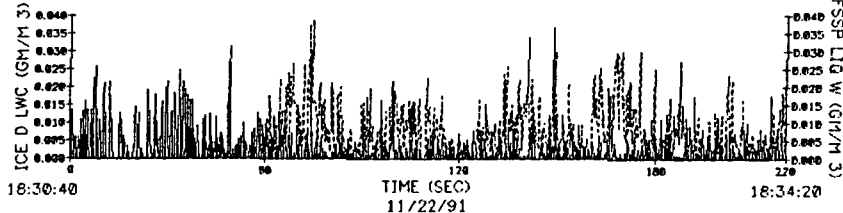
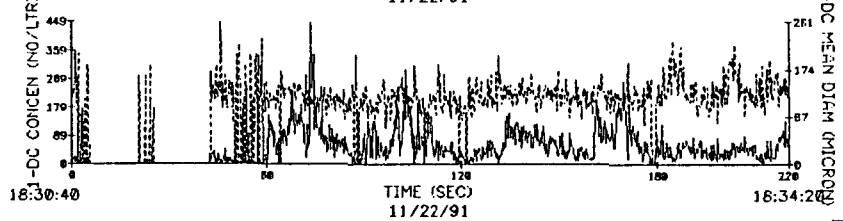
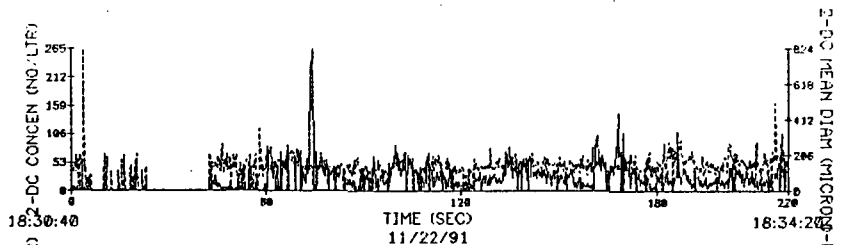
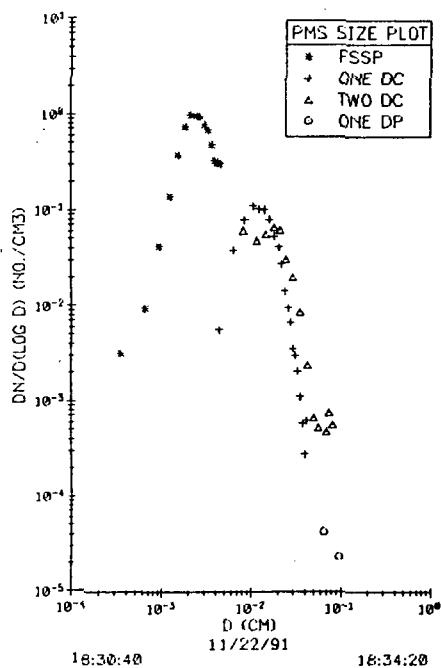
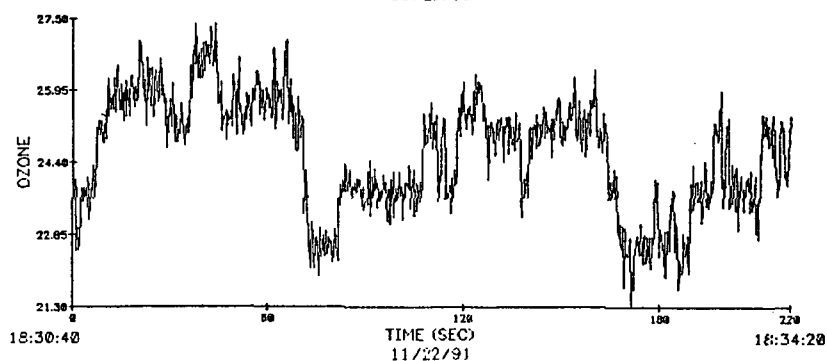
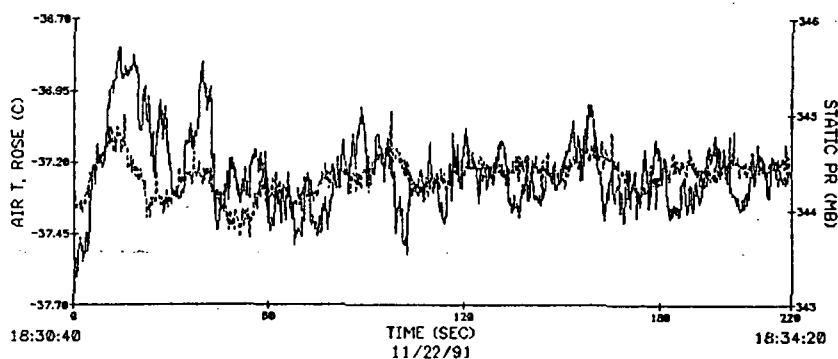
Wind Direction: 224.3 °

Wind Velocity: 41.17 m/sec

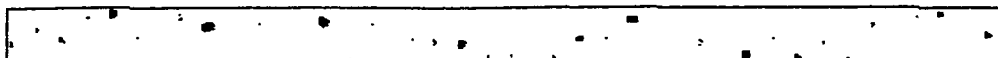
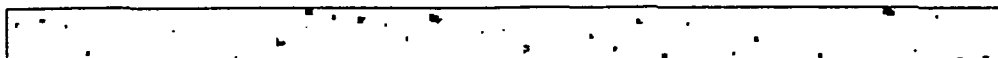
Pressure: 344.36 mb

Pressure Altitude: 8228.4 m

Aircraft Heading: 51.1 °



11/22/91 18:31:59.9282 18:32:00.3572 DeltaT: 0: 0.4290 TAS1 = 110.8 TAS2 = 110.8



11/22/91

18:38:50-18:45:50

Leg # 2

Averages:

Temperature: -37.1 °C

Dew Point: Not Available

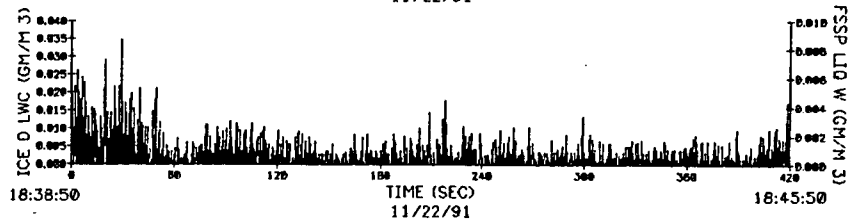
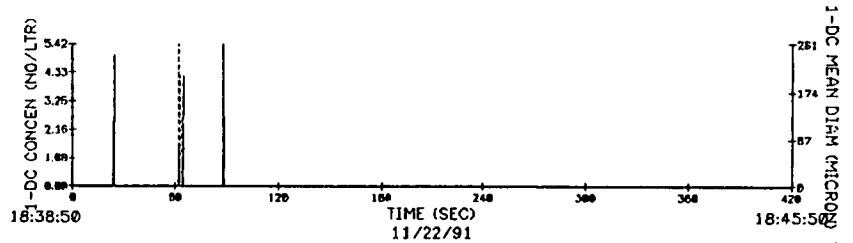
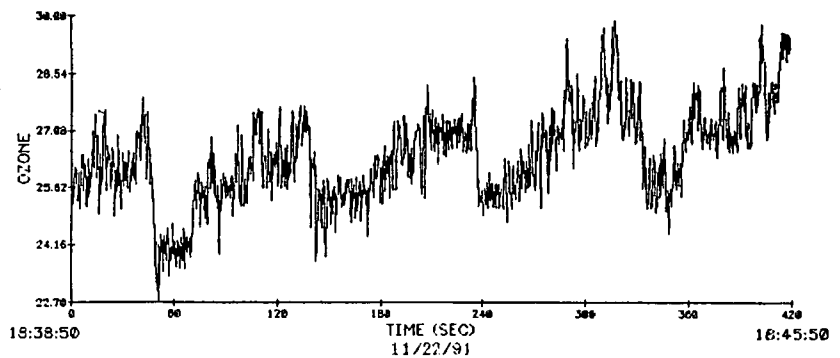
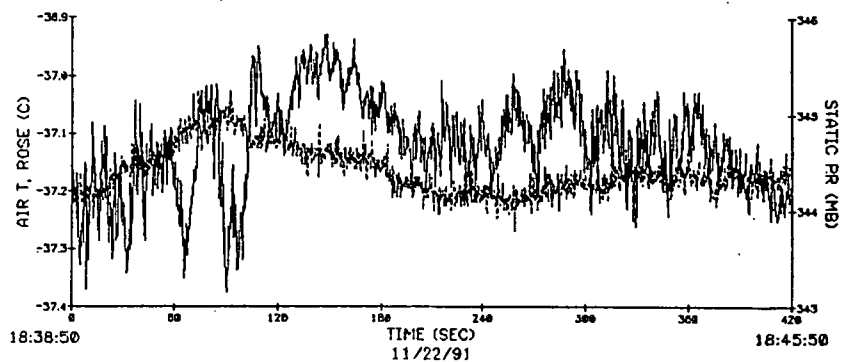
Wind Direction: 221.8 °

Wind Velocity: 45.19 m/sec

Pressure: 344.42 mb

Pressure Altitude: 8227.2 m

Aircraft Heading: 223.3 °



No 2-DC DATA

11/22/91

18:47:20-18:48:00

Leg # 3a

Averages:

Temperature: -36.9 ° C

Dew Point: -43.2 ° C

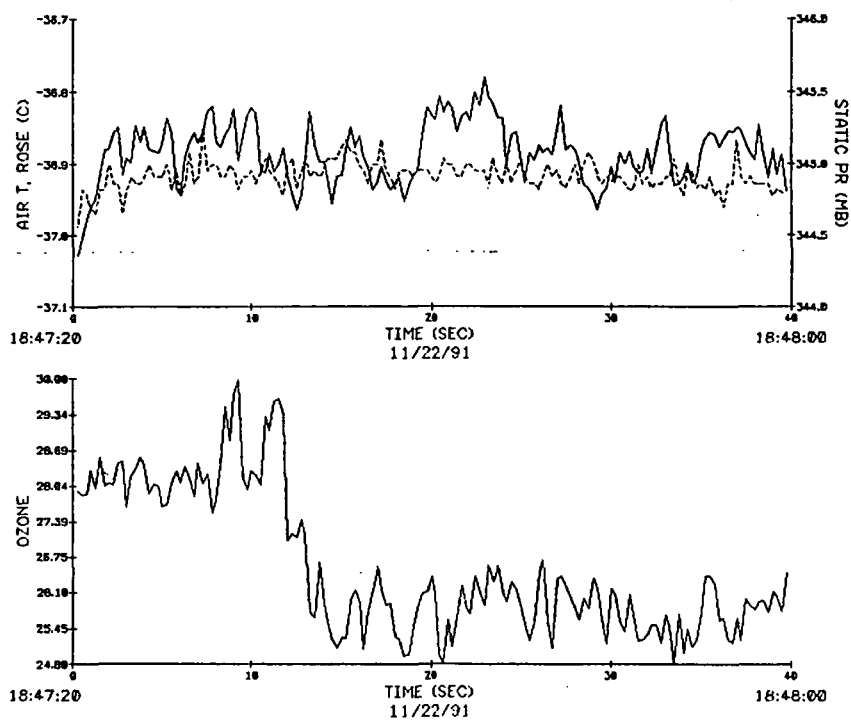
Wind Direction: 220.9 °

Wind Velocity: 43.79 m/sec

Pressure: 344.98 mb

Pressure Altitude: 8216.1 m

Aircraft Heading: 43.0 °



No Cloud

11/22/91

18:49:00-18:51:15

Leg # 3b

Averages:

Temperature: -34.8 °C

Dew Point: Not Available

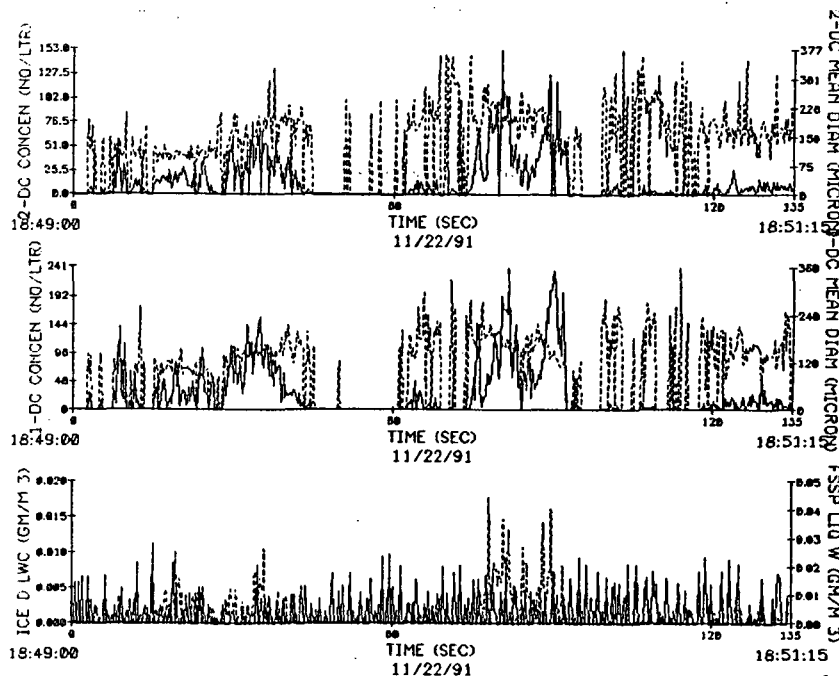
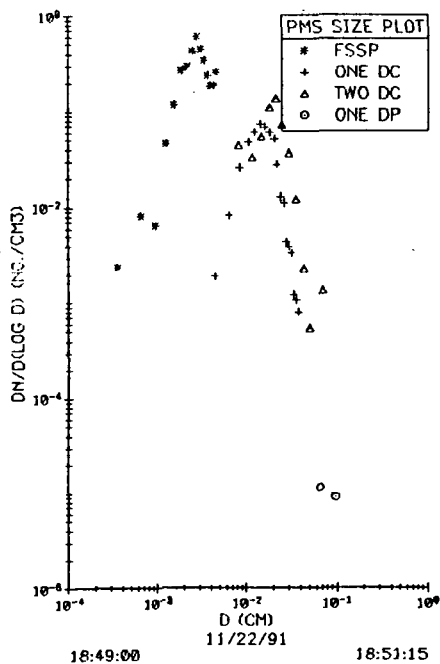
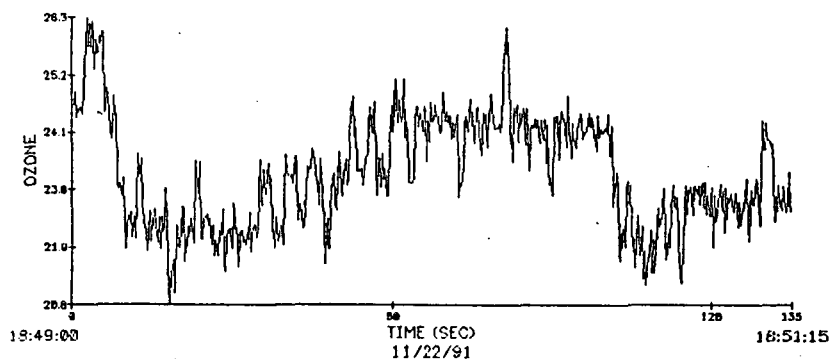
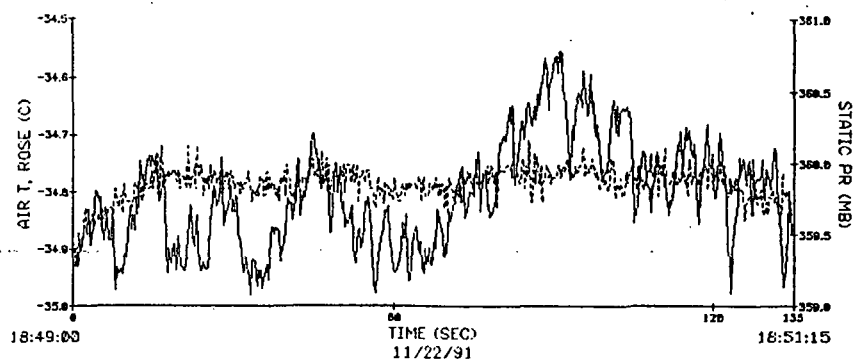
Wind Direction: 217.8 °

Wind Velocity: 39.91 m/sec

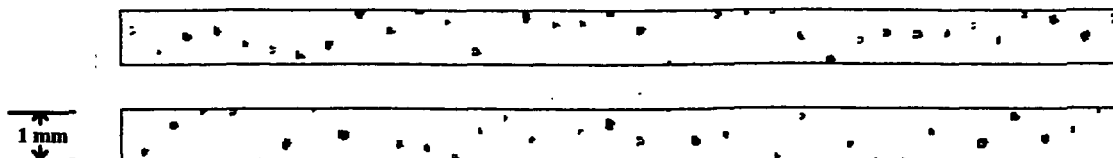
Pressure: 359.85 mb

Pressure Altitude: 7924.9 m

Aircraft Heading: 40.8 °



11/22/91 18:49:41.6053 18:49:42.8706 DeltaT: 0: 1.2653 TAS1 = 114.6 TAS2 = 114.4



11/22/91

18:53:40-18:57:00

Leg # 4a

Averages:

Temperature: -34.8 °C

Dew Point: -37.3 °C

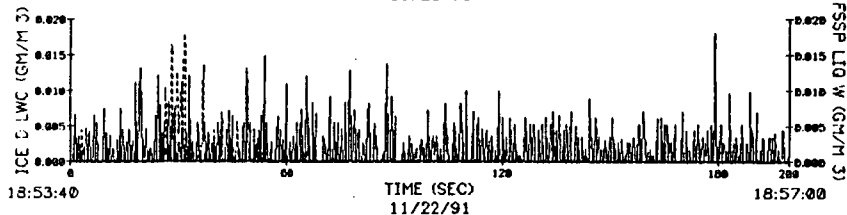
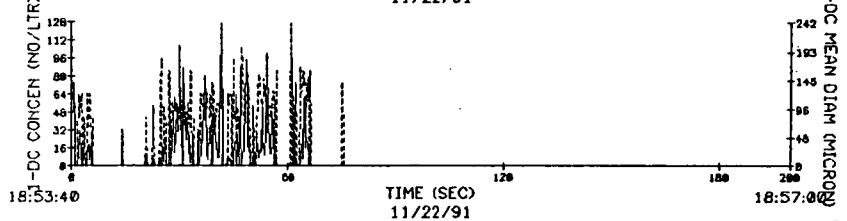
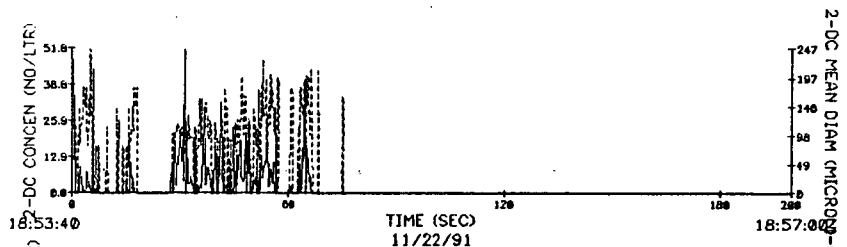
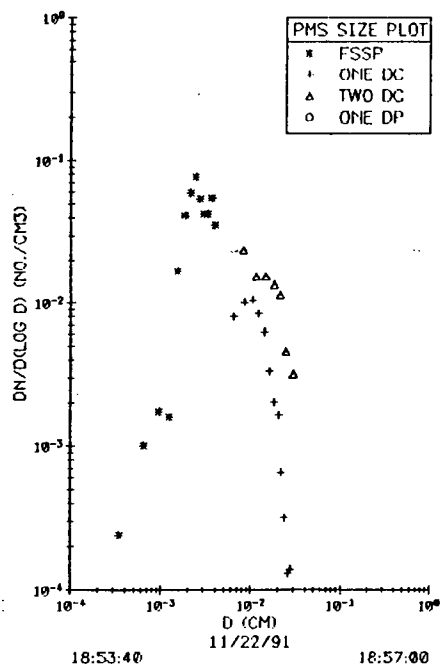
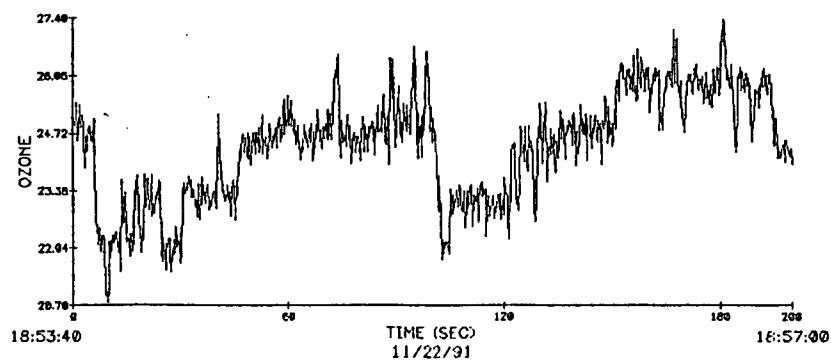
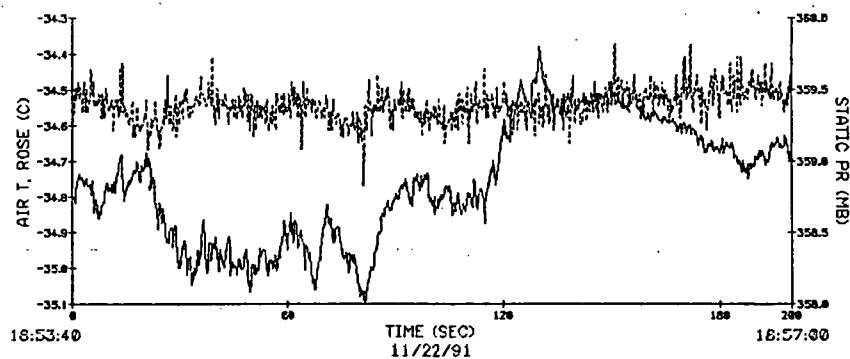
Wind Direction: 217.6 °

Wind Velocity: 42.24 m/sec

Pressure: 359.40 mb

Pressure Altitude: 7933.6 m

Aircraft Heading: 220.6 °



11/22/91

18:54:19.1079

18:54:20.7781

DeltaT: 0: 1.6702

TAS1 = 108.2

TAS2 = 108.2

1 mm

11/22/91

18:58:10-19:01:40

Leg # 4b

Averages:

Temperature: -32.5 °C

Dew Point: -39.1 °C

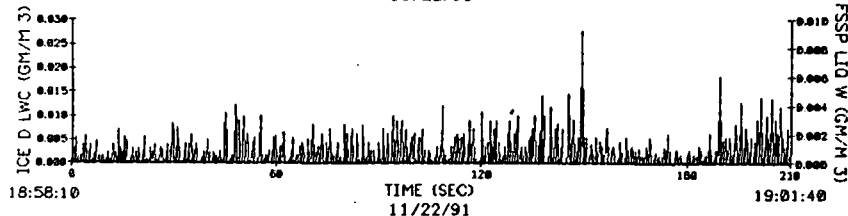
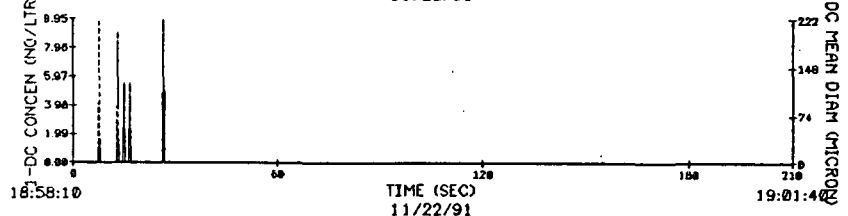
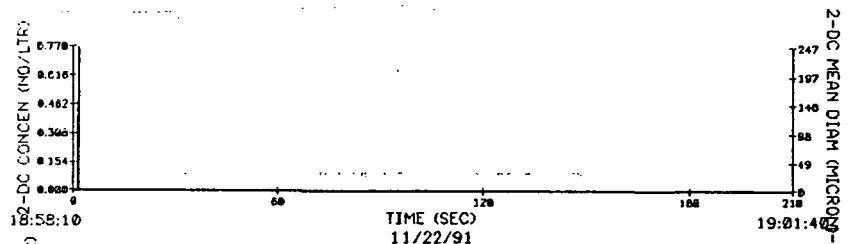
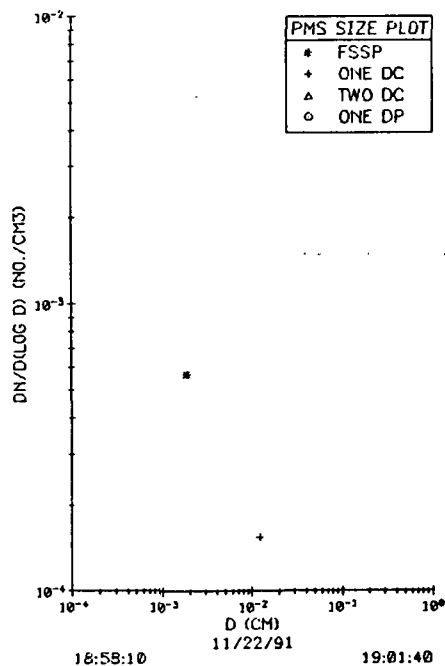
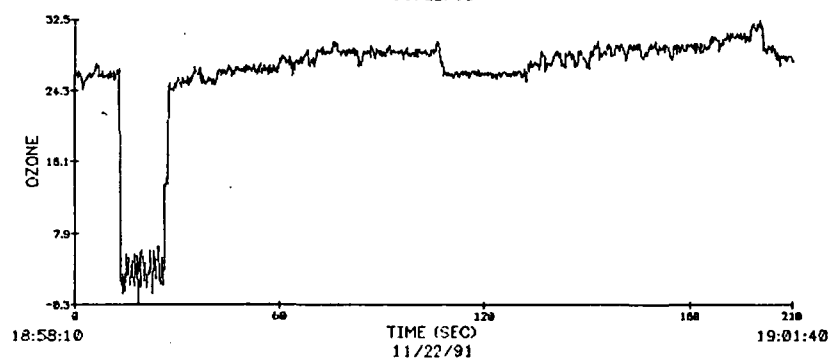
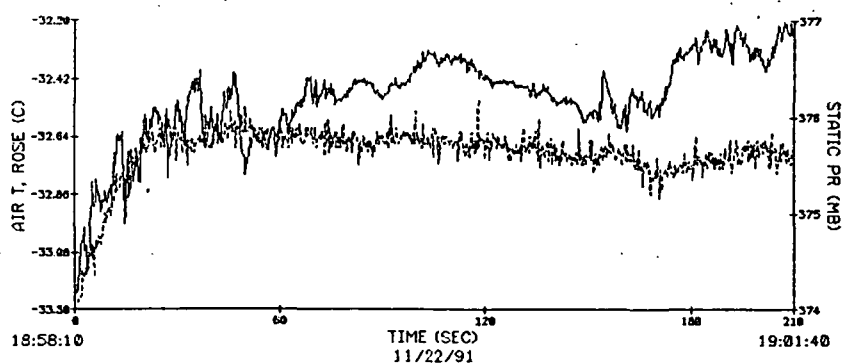
Wind Direction: 217.5 °

Wind Velocity: 38.76 m/sec

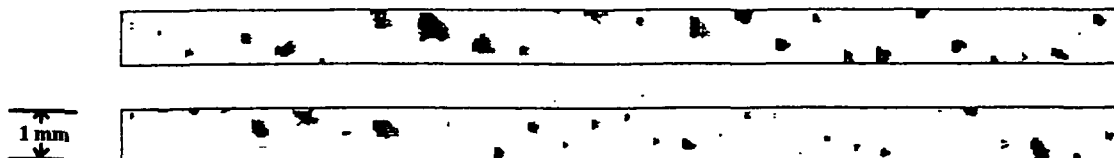
Pressure: 375.62 mb

Pressure Altitude: 7626.7 m

Aircraft Heading: 222.1 °



11/22/91 18:57:48.0921 18:58:36.9363 DeltaT: 0:48.8442 TAS1 = 123.3 TAS2 = 122.5



11/22/91

19:03:10-19:14:30

Leg # 5

Averages:

Temperature: -32.9 °C

Dew Point: -33.7 °C

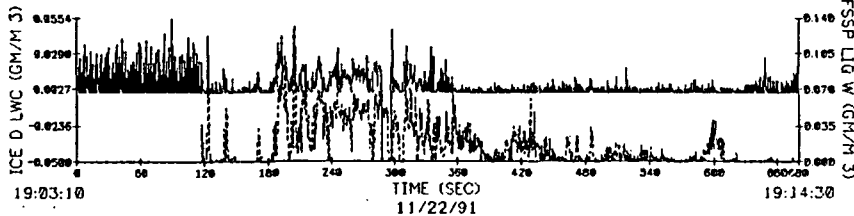
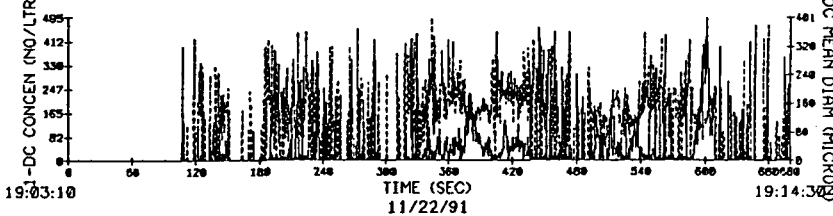
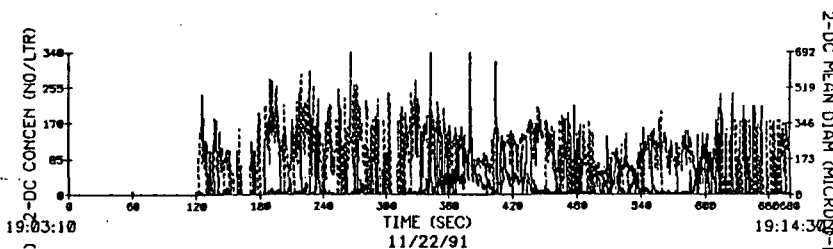
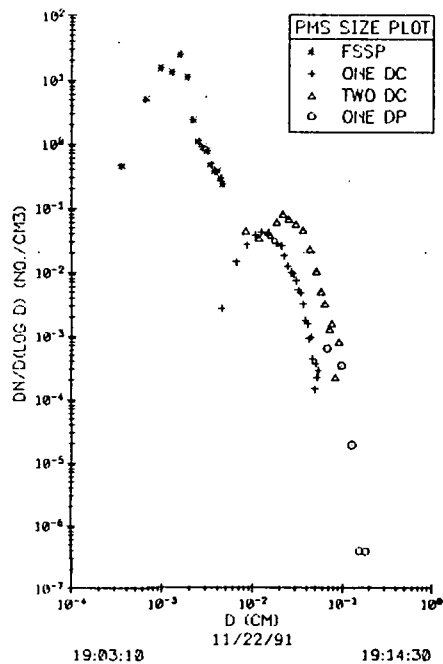
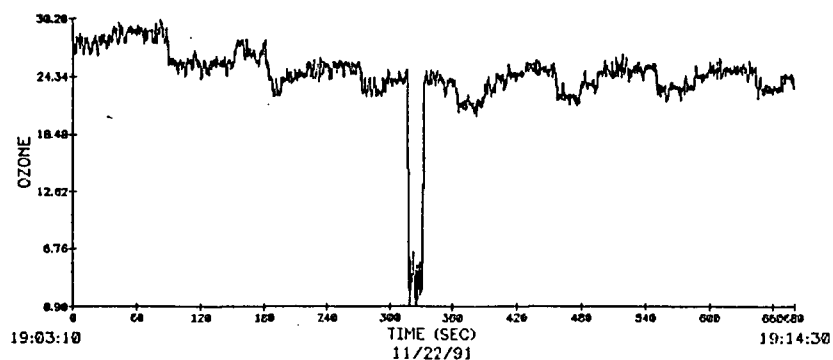
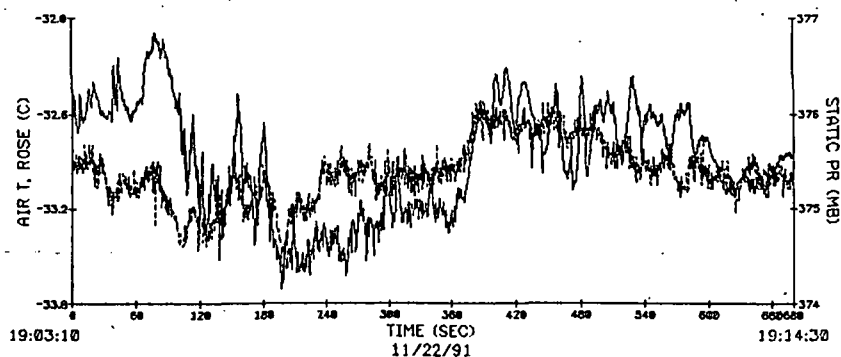
Wind Direction: 218.4 °

Wind Velocity: 37.44 m/sec

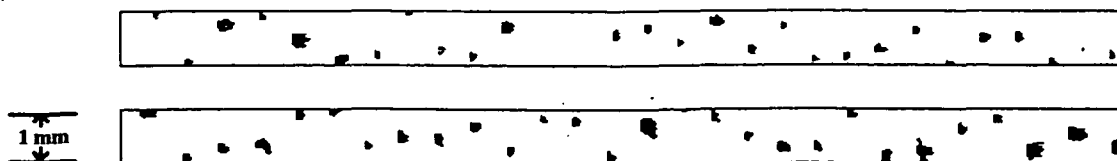
Pressure: 375.38 mb

Pressure Altitude: 7631.2 m

Aircraft Heading: 42.7 °



11/22/91 19:08:51.9041 19:08:52.0428 DeltaT: 0: 0.1387 TAS1 = 134.1 TAS2 = 134.1



11/22/91

19:16:50-19:25:20

Leg # 6

Averages:

Temperature: -32.9 °C

Dew Point: Not Available

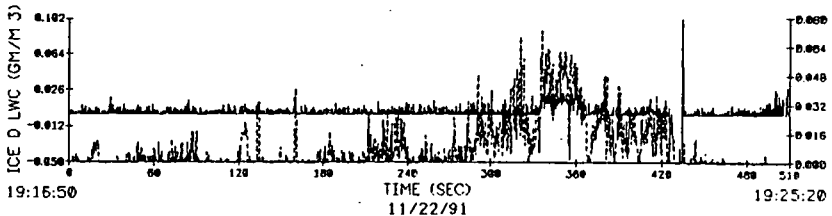
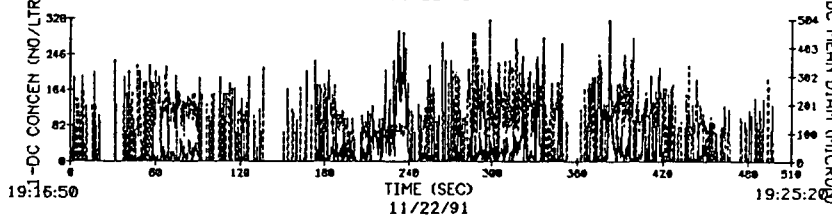
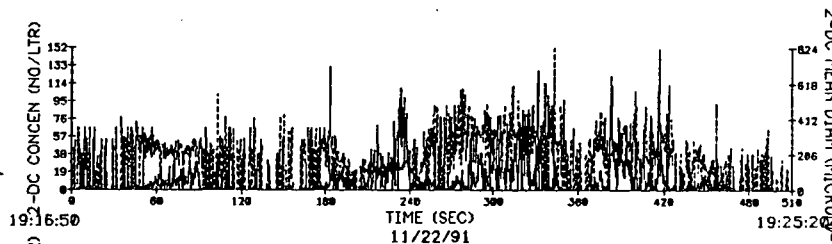
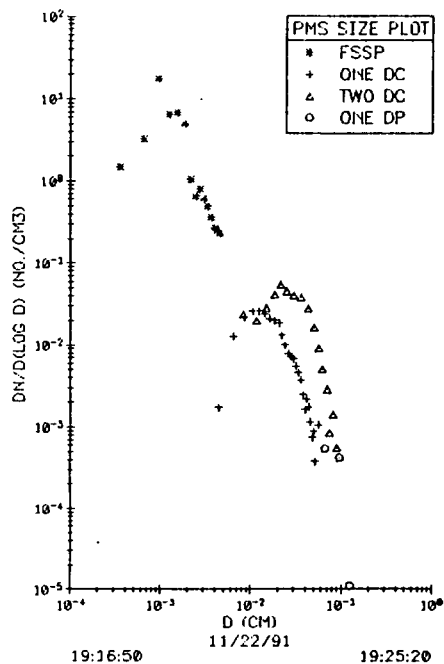
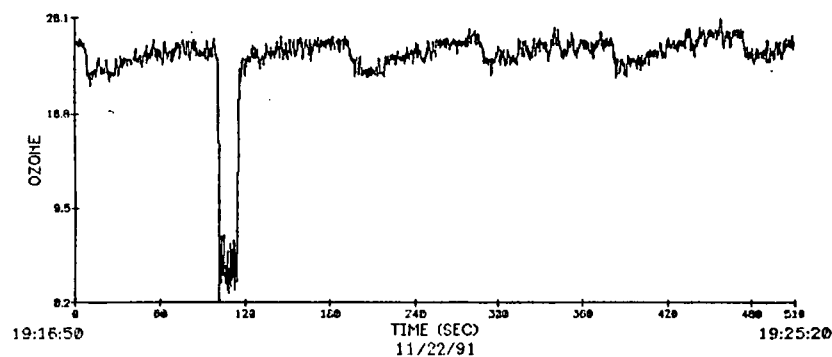
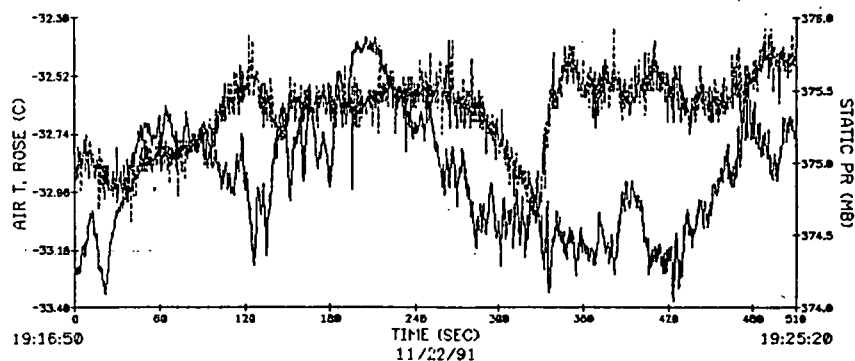
Wind Direction: 218.8 °

Wind Velocity: 39.50 m/sec

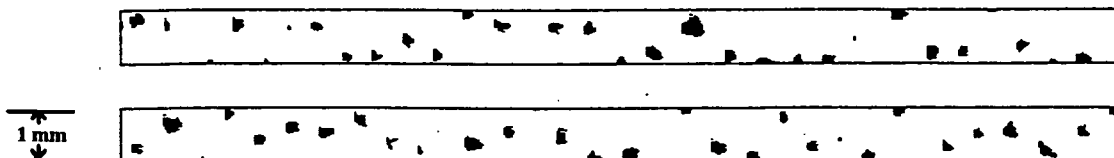
Pressure: 375.36 mb

Pressure Altitude: 7631.5 m

Aircraft Heading: 221.1 °



11/22/91 19:22:05.3812 19:22:05.6100 DeltaT: 0: 0.2288 TAS1 = 101.1 TAS2 = 101.1



11/22/91

19:27:30-19:30:35

Leg # 7

Averages:

Temperature: -30.3 °C

Dew Point: Not Available

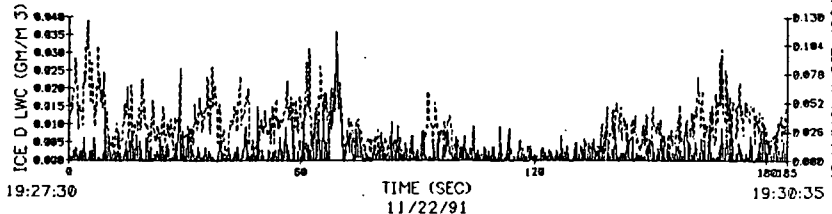
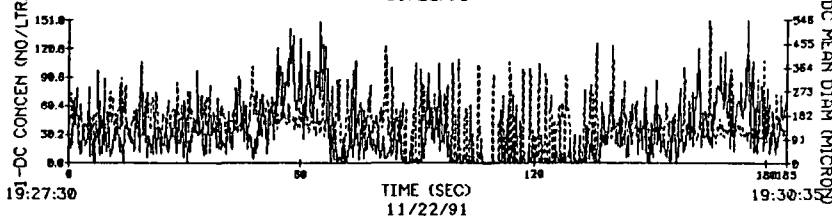
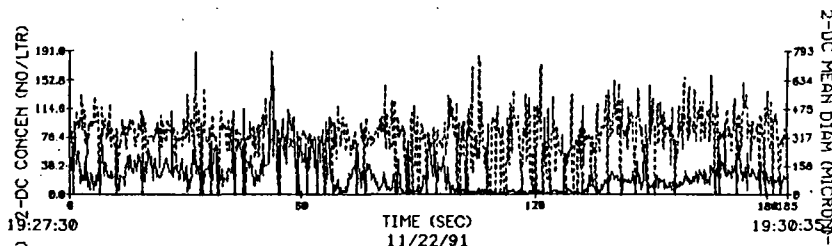
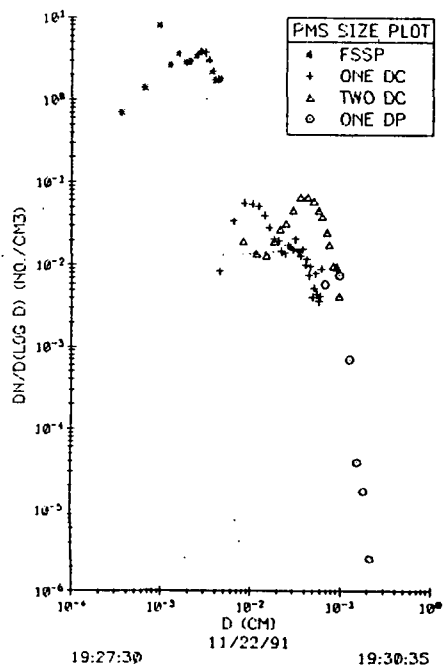
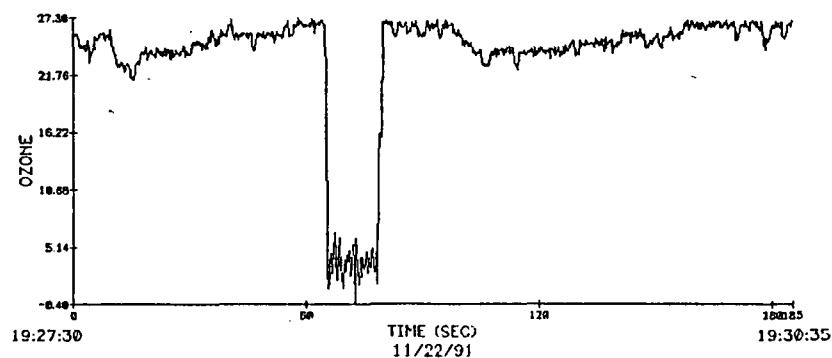
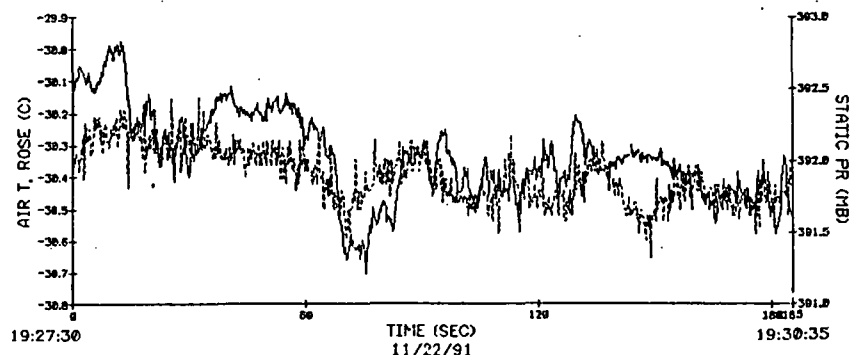
Wind Direction: 220.0 °

Wind Velocity: 35.62 m/sec

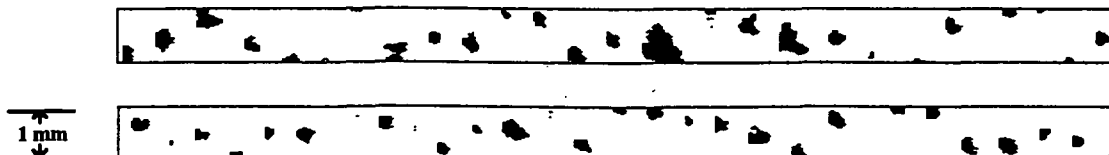
Pressure: 391.90 mb

Pressure Altitude: 7329.3 m

Aircraft Heading: 31.8



11/22/91 19:28:09.1733 19:28:09.4323 DeltaT: 0: 0.2590 TAS1 = 111.4 TAS2 = 111.4



11/22/91

19:32:30-19:41:00

Leg # 8

Averages:

Temperature: -30.6 °C

Dew Point: Not Available

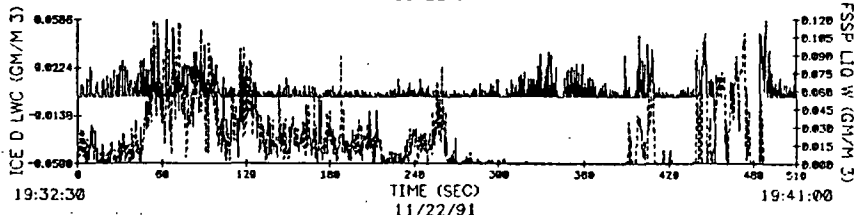
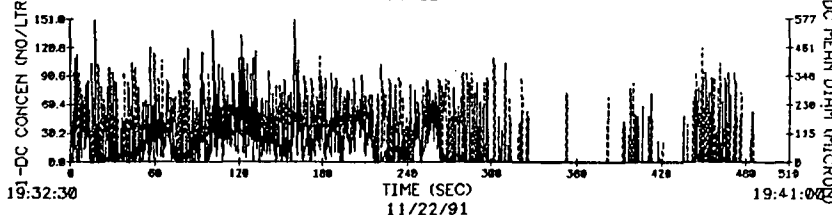
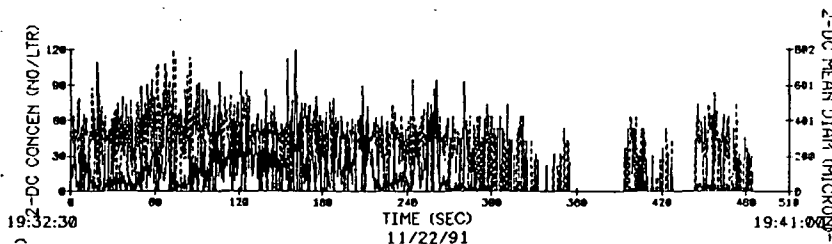
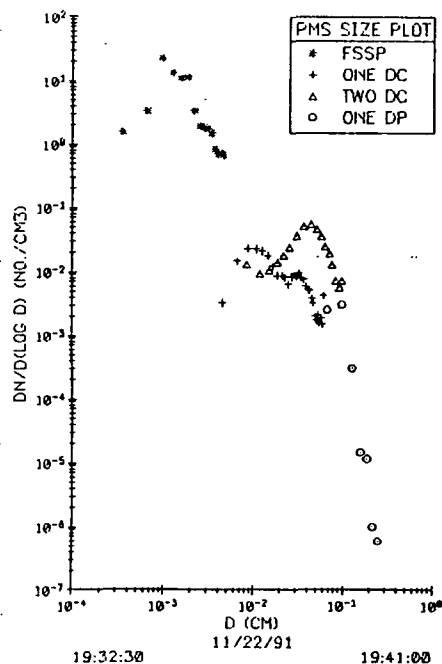
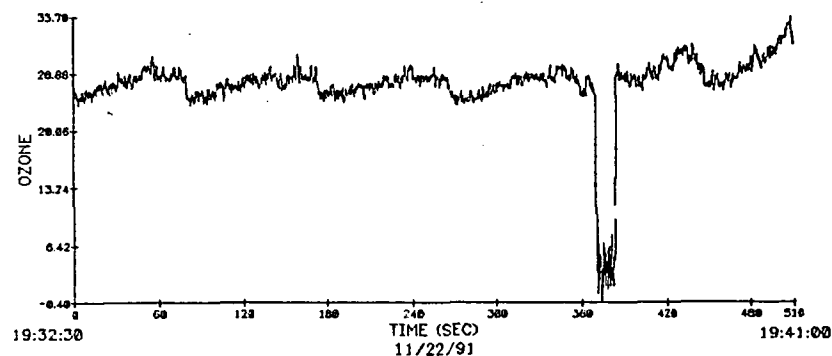
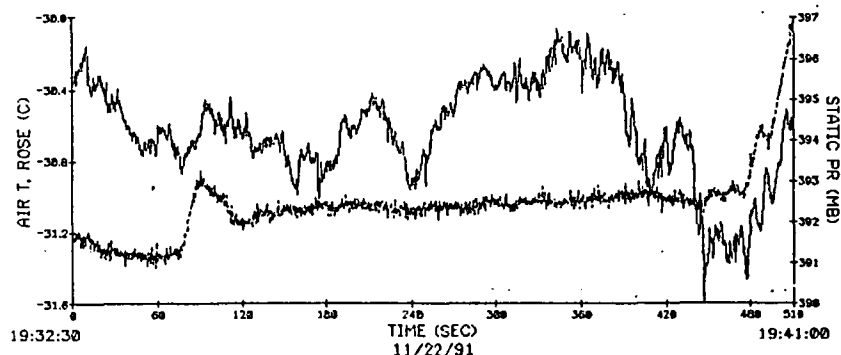
Wind Direction: 217.3 °

Wind Velocity: 36.27 m/sec

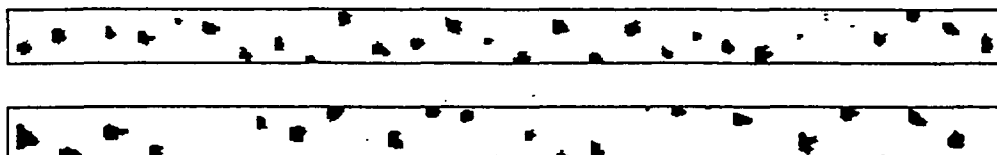
Pressure: 392.50 mb

Pressure Altitude: 7318.4 m

Aircraft Heading: 220.5 °



11/22/91 19:36:49.7090 19:36:49.8760 DeltaT: 0: 0.1670 TAS1 = 110.3 TAS2 = 110.3



11/22/91

19:42:40-19:46:30

Leg # 9

Averages:

Temperature: -28.4 °C

Dew Point: Not Available

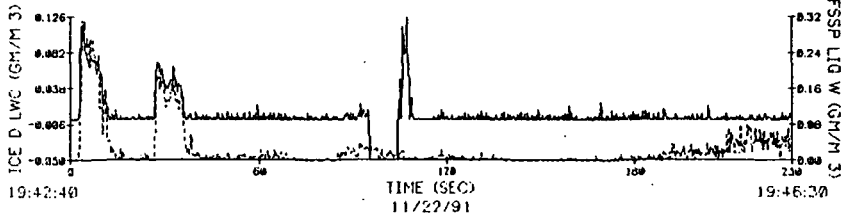
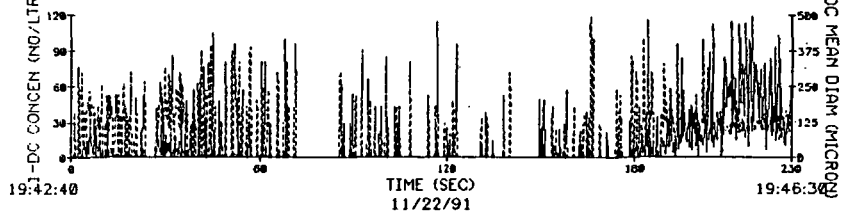
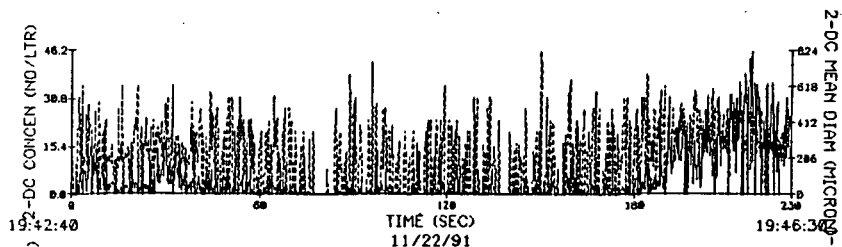
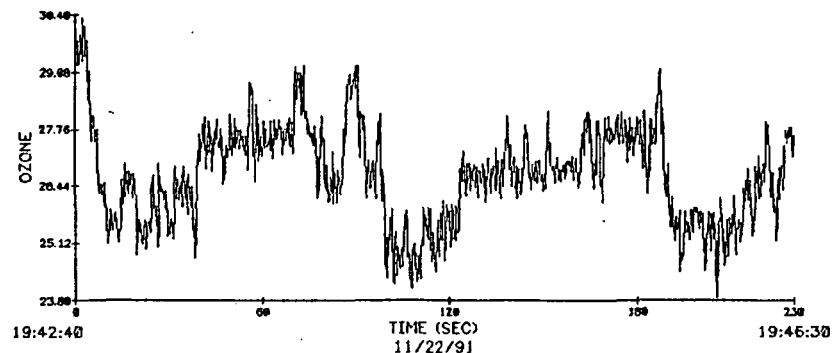
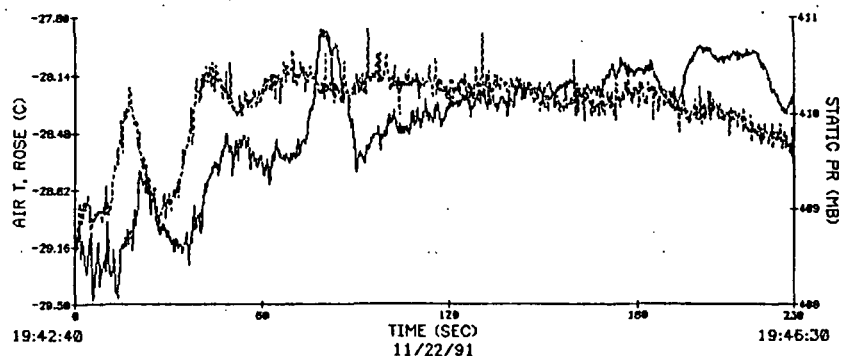
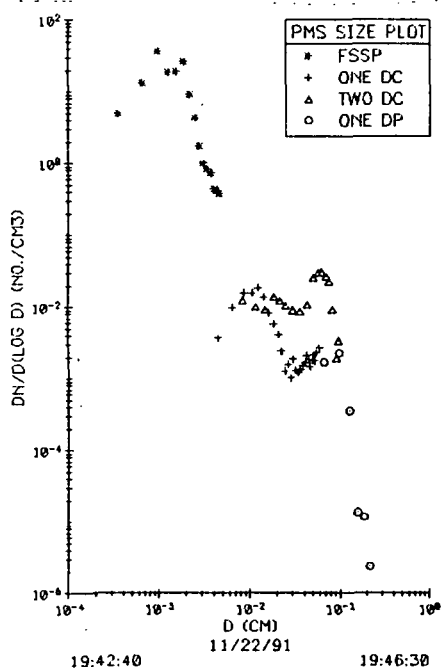
Wind Direction: 221.4 °

Wind Velocity: 35.94 m/sec

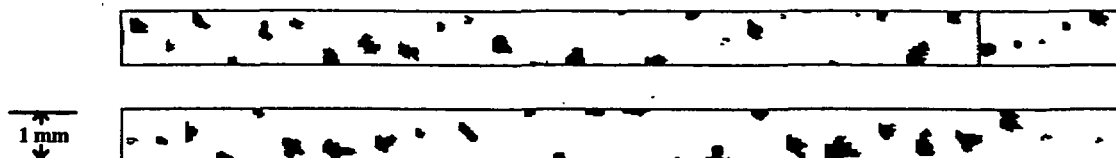
Pressure: 410.02 mb

Pressure Altitude: 7009.6 m

Aircraft Heading: 38.1



11/22/91 19:45:31.8373 19:45:38.5489 DeltaT: 0: 6.7116 TAS1 = 92.7 TAS2 = 91.6



11/22/91

19:49:00-19:56:25

Leg # 10

Averages:

Temperature: -29.1 ° C

Dew Point: Not Available

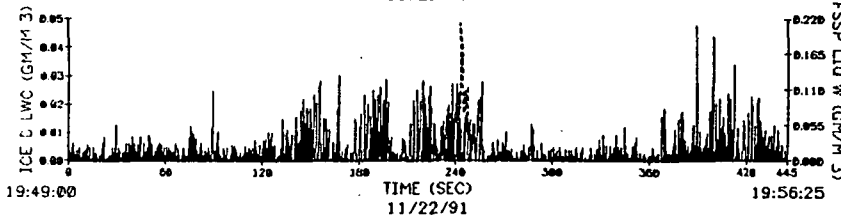
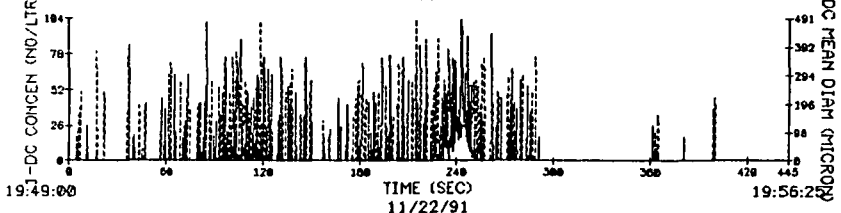
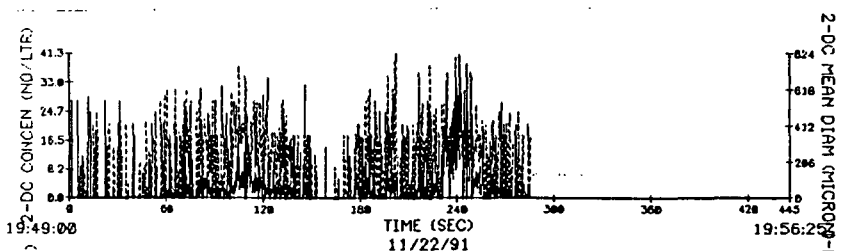
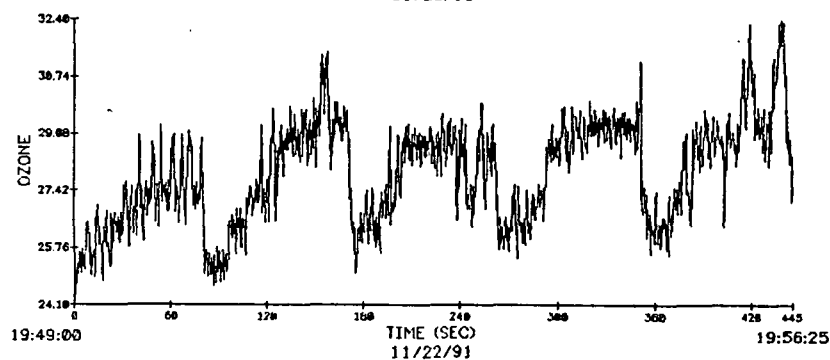
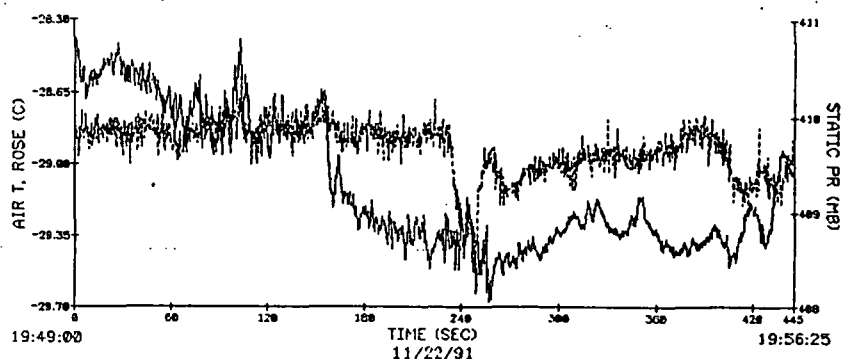
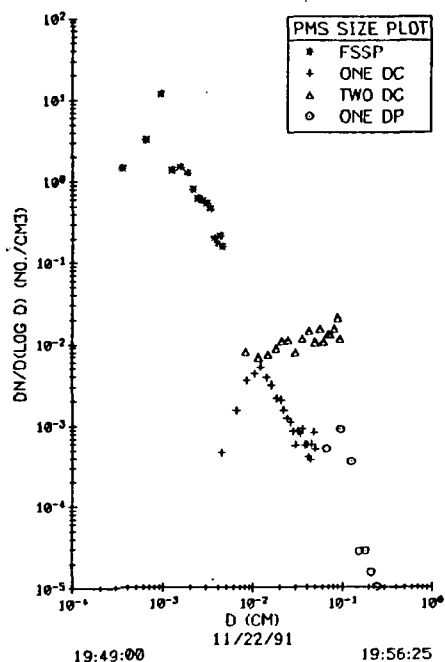
Wind Direction: 221.9 °

Wind Velocity: 36.35 m/sec

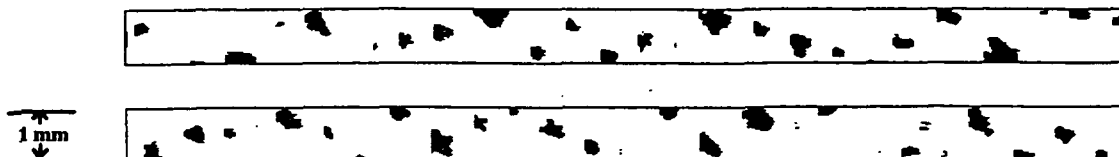
Pressure: 409.68 mb

Pressure Altitude: 7015.6 m

Aircraft Heading: 221.8 °



11/22/91 19:50:45.8065 19:50:46.8807 DeltaT: 0: 1.0742 TAS1 = 107.3 TAS2 = 107.3



11/22/91

19:59:30-20:04:20

Leg # 11

Averages:

Temperature: -31.4 °C

Dew Point: -39.4 °C

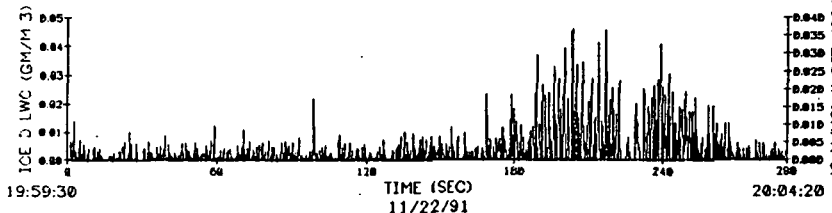
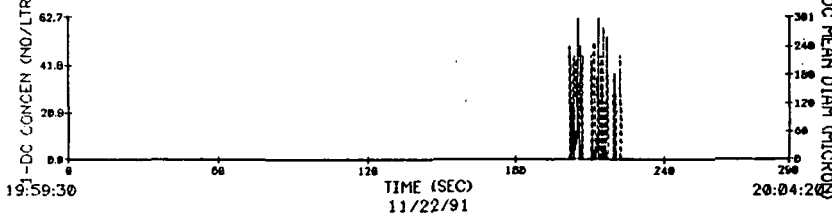
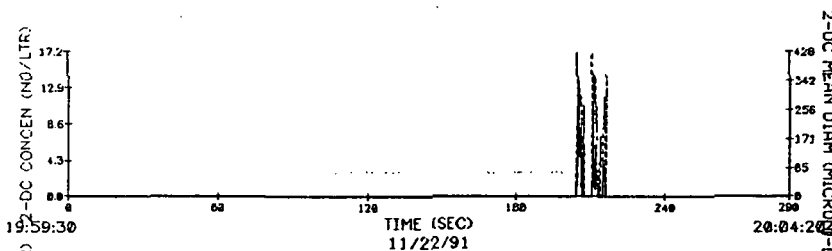
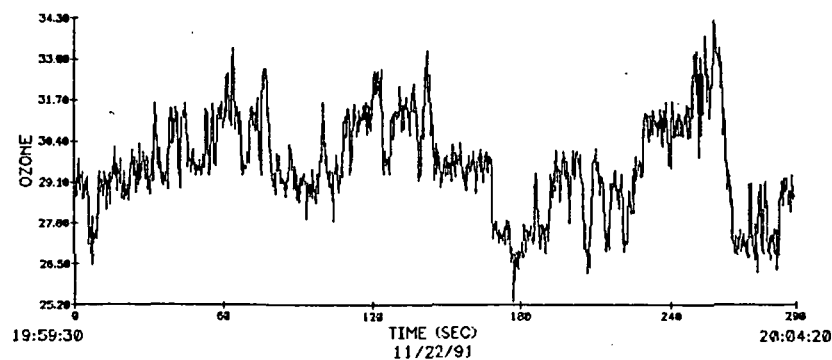
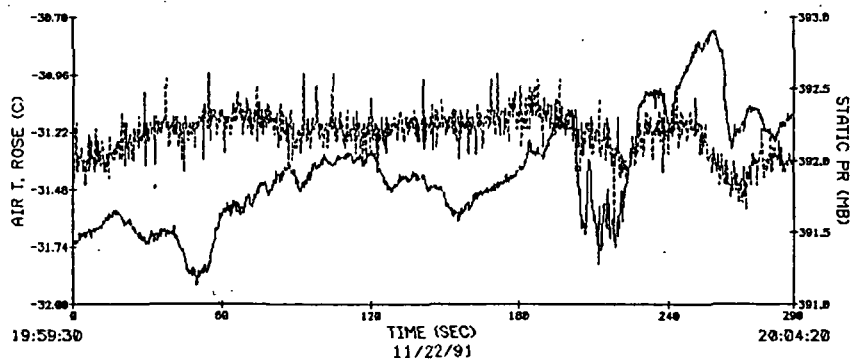
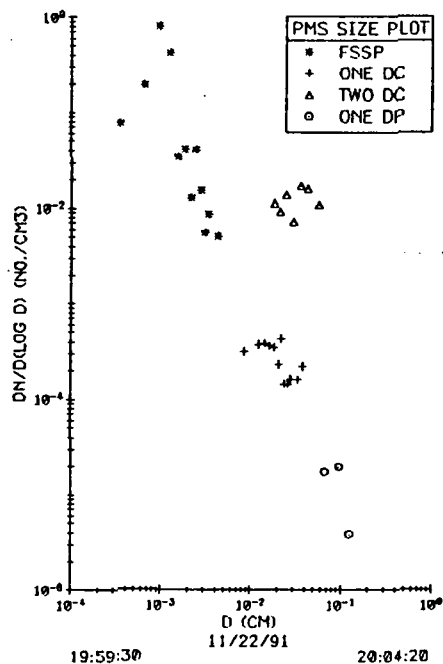
Wind Direction: 220.6 °

Wind Velocity: 37.47 m/sec

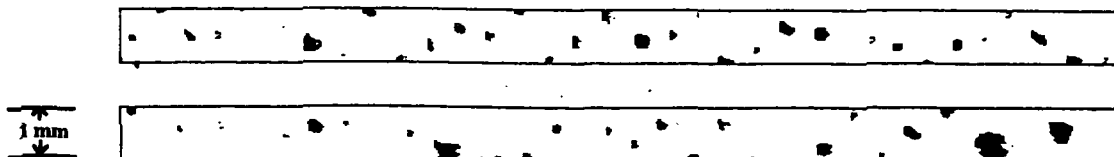
Pressure: 392.18 mb

Pressure Altitude: 7324.2 m

Aircraft Heading: 44.2 °



11/22/91 20:02:56.0168 20:03:06.9507 DeltaT: 0:10.9339 TAS1 = 100.6 TAS2 = 100.6



11/22/91

20:05:20-20:06:10

Leg # 12a

Averages:

Temperature: -30.9 °C

Dew Point: -32.7 °C

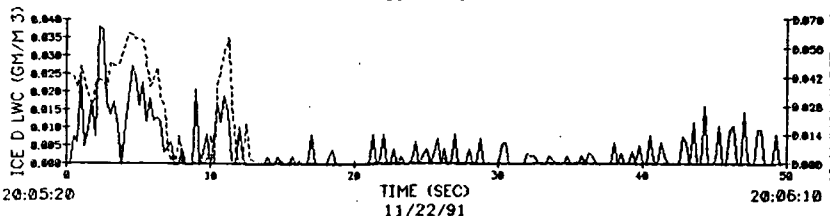
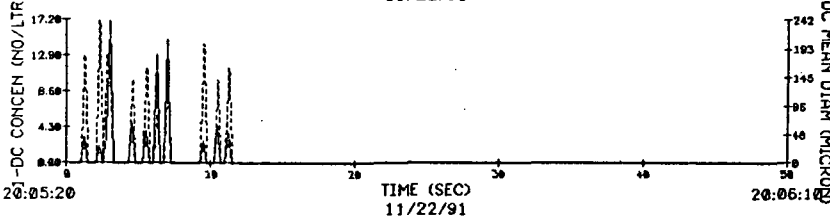
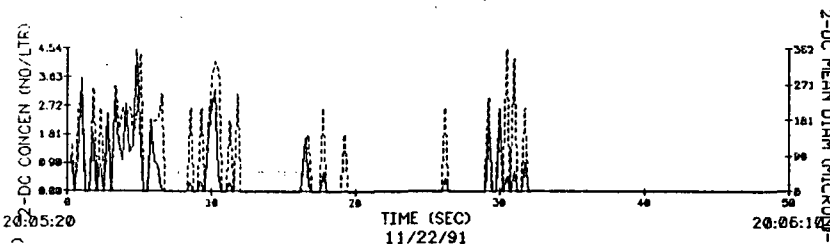
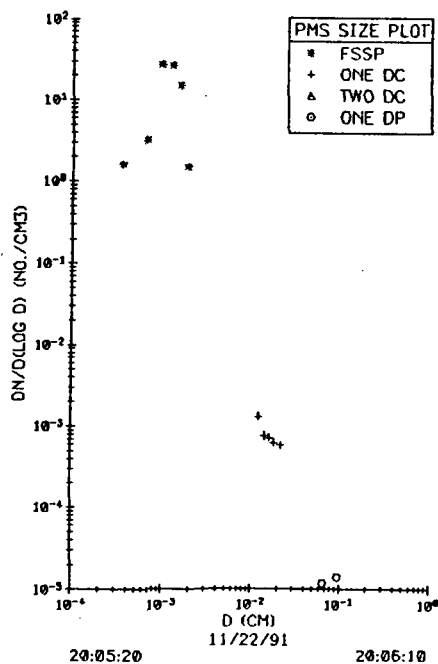
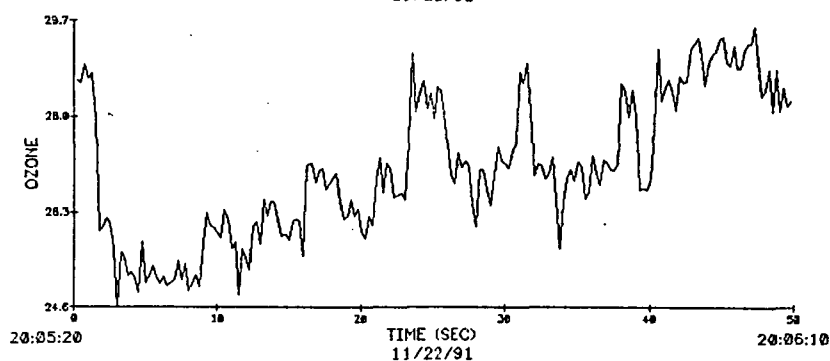
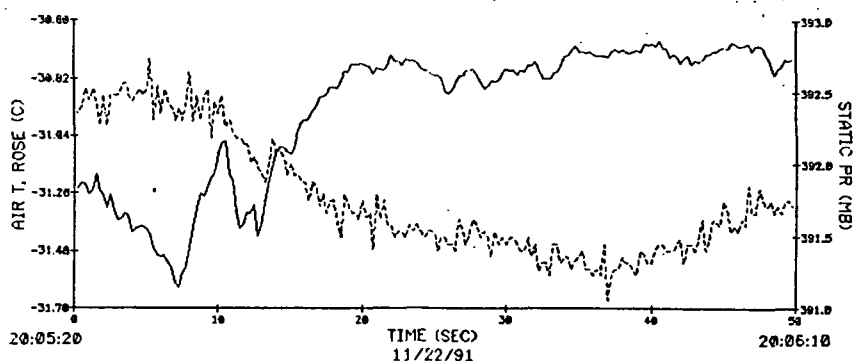
Wind Direction: 213.1 °

Wind Velocity: 35.61 m/sec

Pressure: 391.75 mb

Pressure Altitude: 7332.0 m

Aircraft Heading: 146.7 °



11/22/91 20:05:22.9870 20:06:36.9249 DeltaT: 1:13.9379 TAS1 = 93.9 TAS2 = 113.2

1 mm

11/22/91

20:07:20-20:09:30

Leg # 12b

Averages:

Temperature: -28.3 °C

Dew Point: Not Available

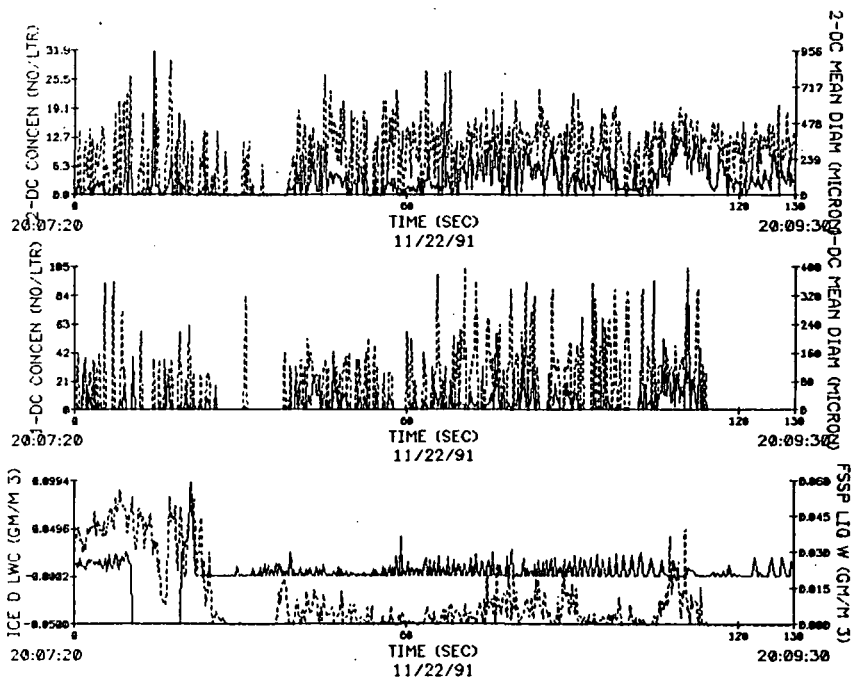
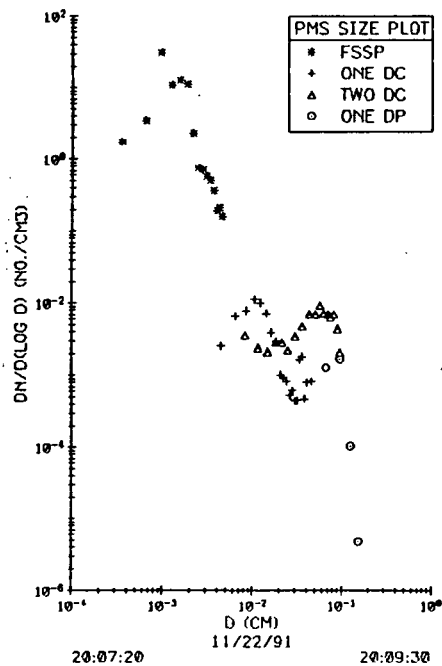
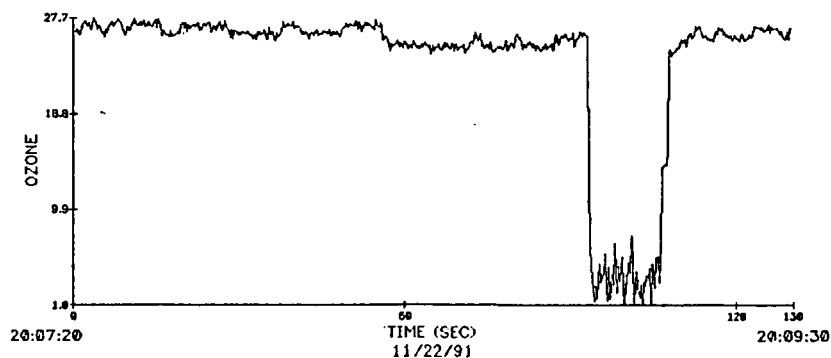
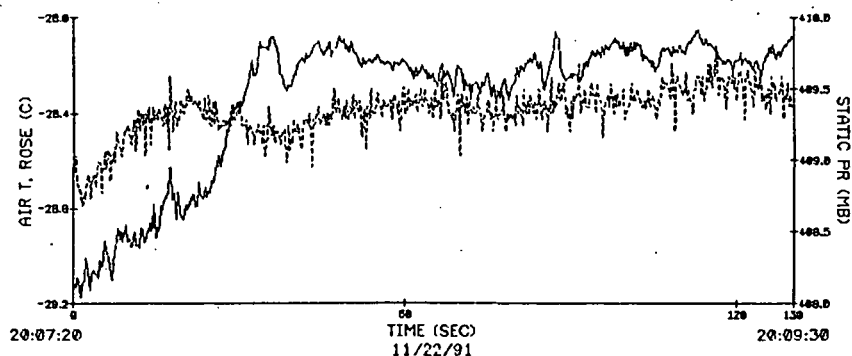
Wind Direction: 218.0 °

Wind Velocity: 33.33 m/sec

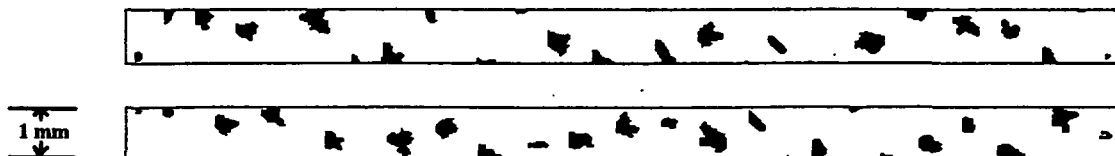
Pressure: 409.35 mb

Pressure Altitude: 7021.4 m

Aircraft Heading: 147.3 °



11/22/91 20:08:14.1217 20:08:19.9427 DeltaT: 0: 5.8210 TAS1 = 112.9 TAS2 = 112.1



11/22/91

20:20:05-20:26:40

Leg # 13

Averages:

Temperature: -28.8 °C

Dew Point: Not Available

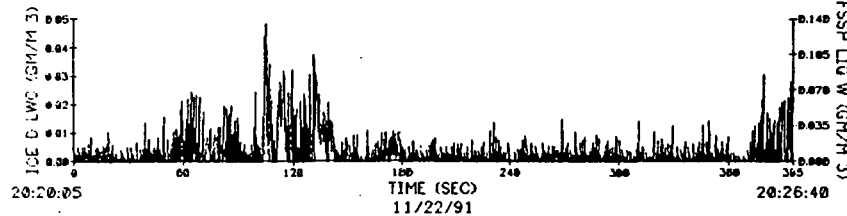
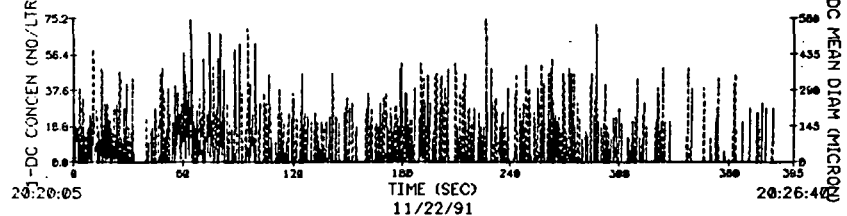
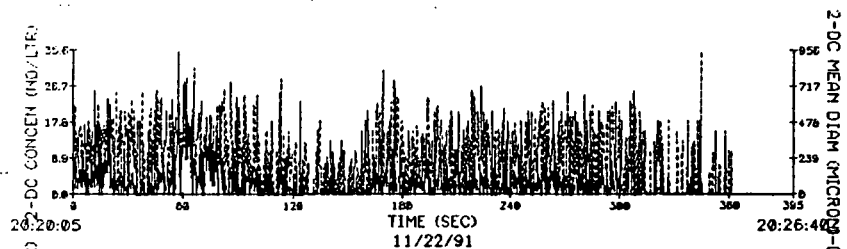
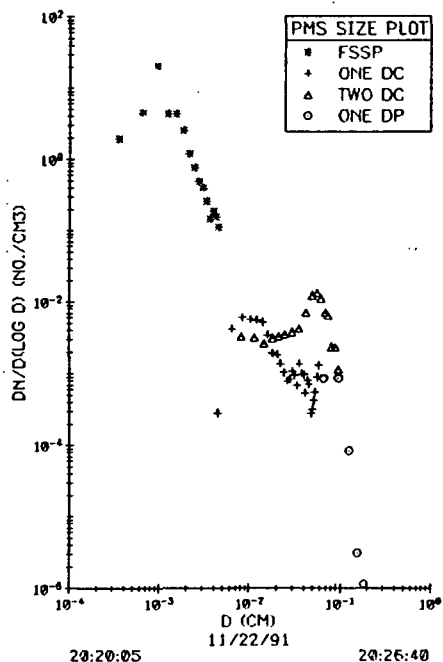
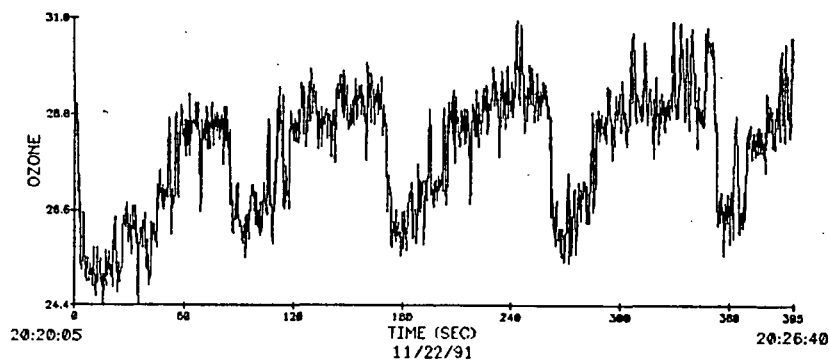
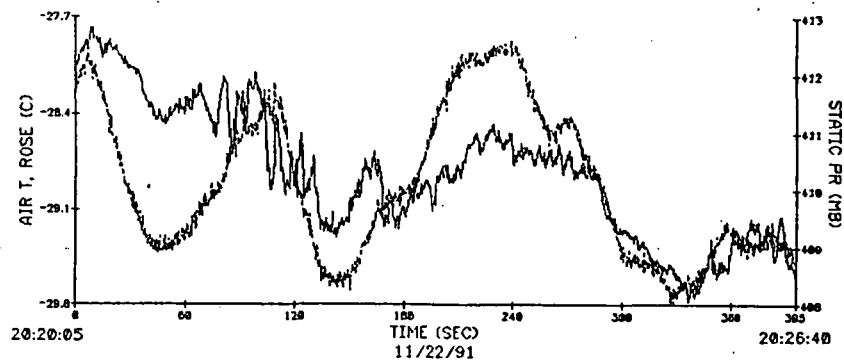
Wind Direction: 221.7 °

Wind Velocity: 35.44 m/sec

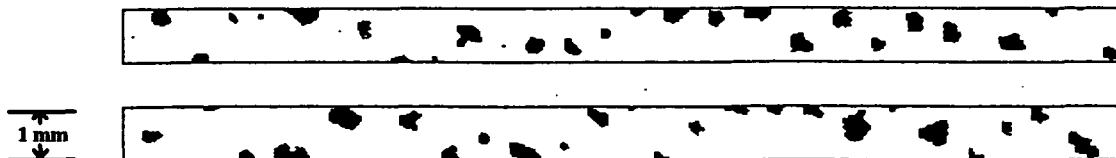
Pressure: 410.10 mb

Pressure Altitude: 7008.4 m

Aircraft Heading: 326.4 °



11/22/91 20:23:39.9293 20:23:44.5702 DeltaT: 0: 4.6409 TAS1 = 100.9 TAS2 = 99.2



11/22/91

20:29:30-20:35:50

Leg # 14

Averages:

Temperature:

Dew Point:

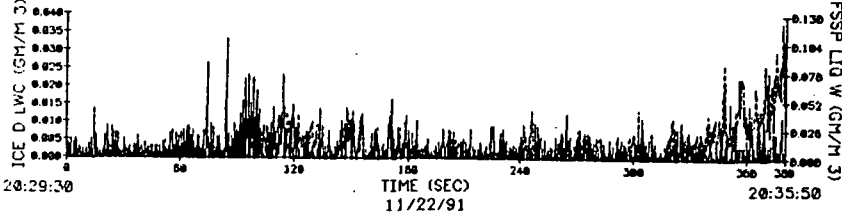
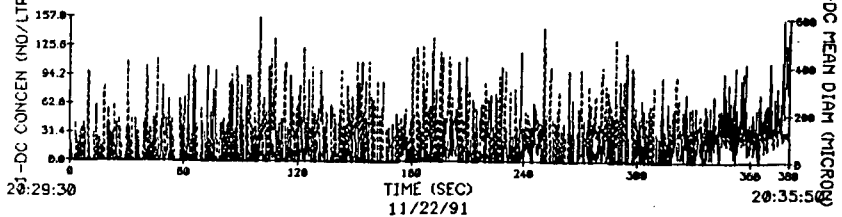
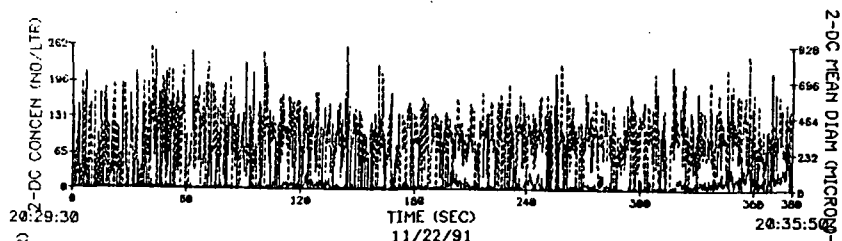
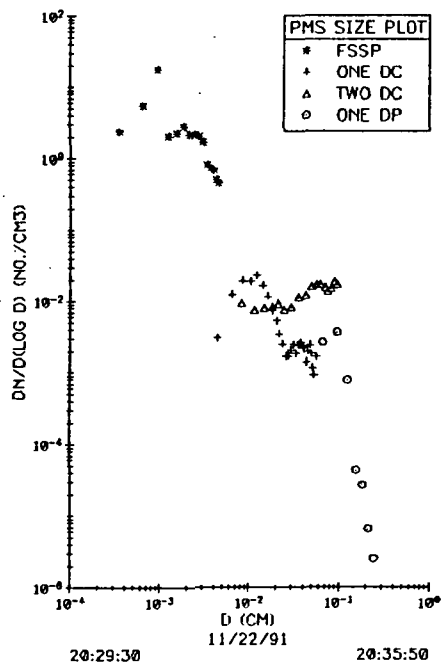
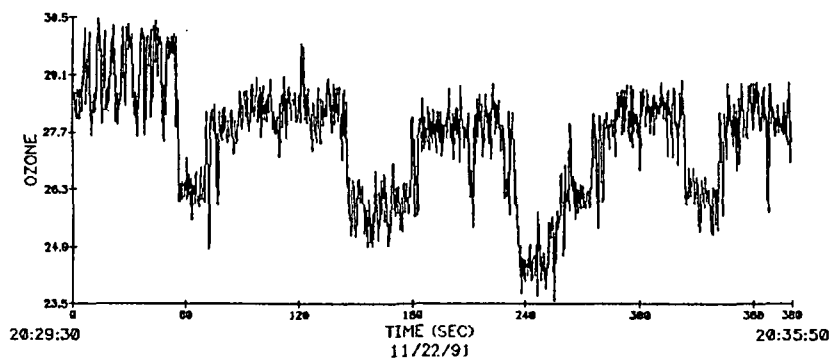
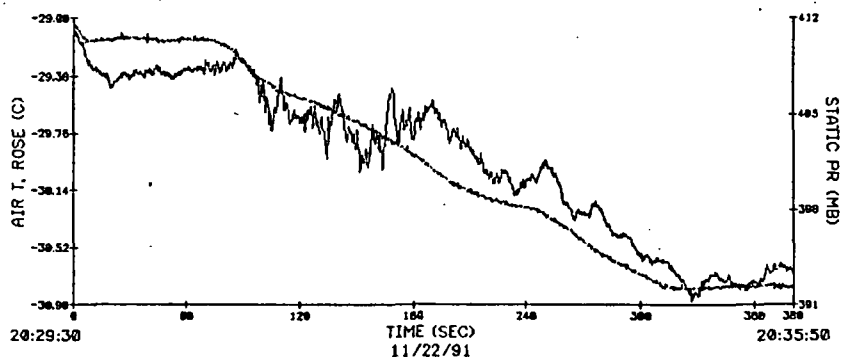
Wind Direction:

Wind Velocity:

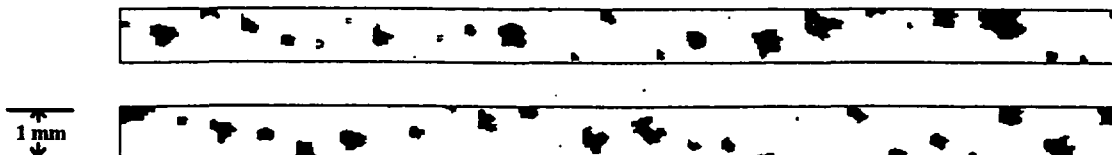
Pressure:

Pressure Altitude:

Aircraft Heading:



11/22/91 20:31:22.2142 20:31:23.3360 DeltaT: 0: 1.1218 TAS1 = 112.4 TAS2 = 112.4



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20:37:40-20:39:50

Leg # 15a

Averages:

Temperature:

Dew Point:

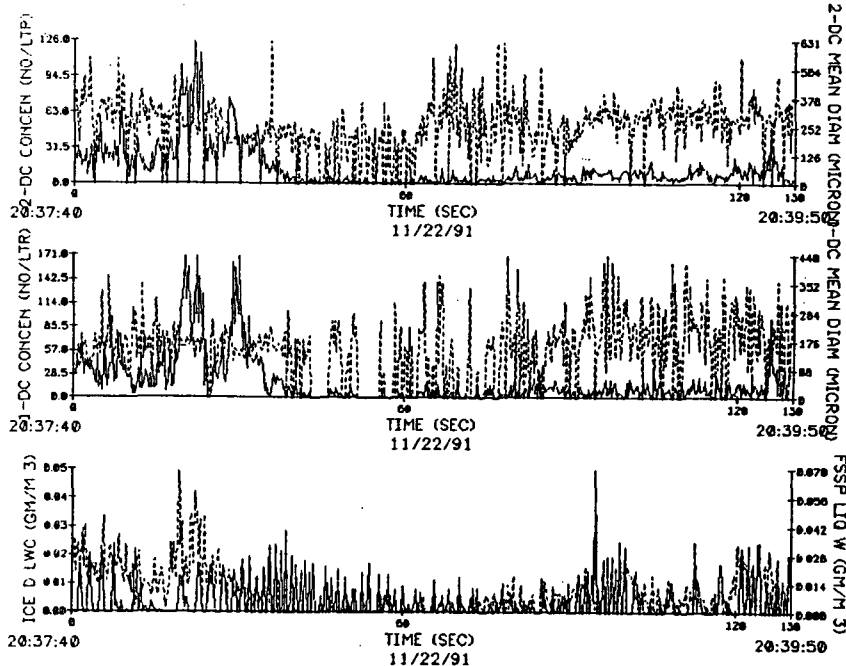
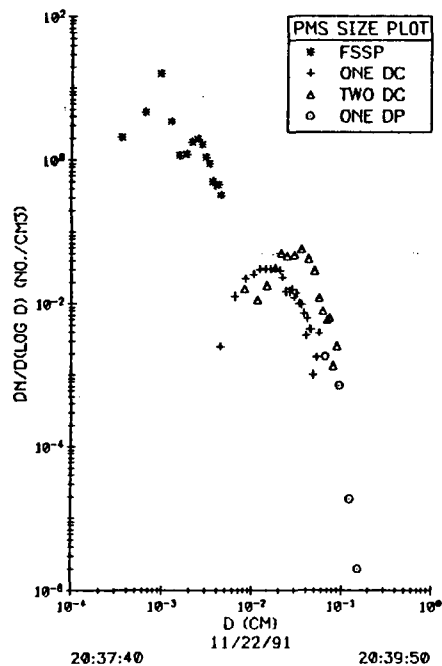
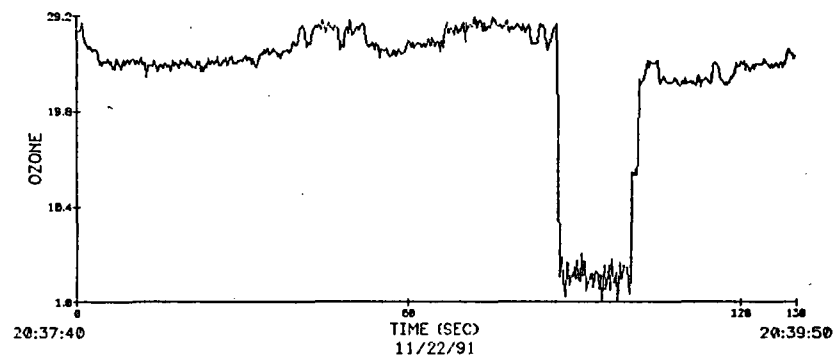
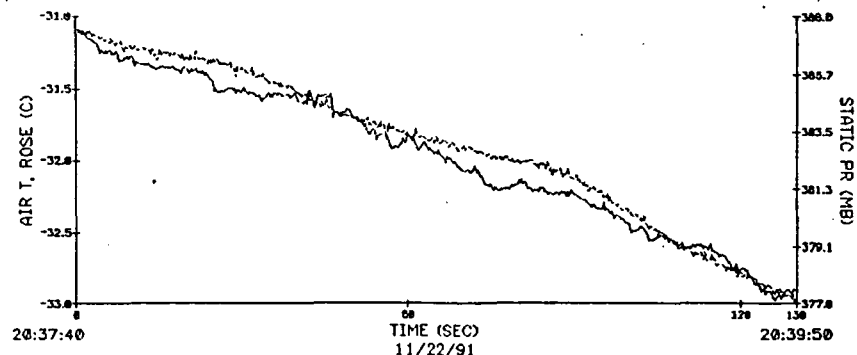
Wind Direction:

Wind Velocity:

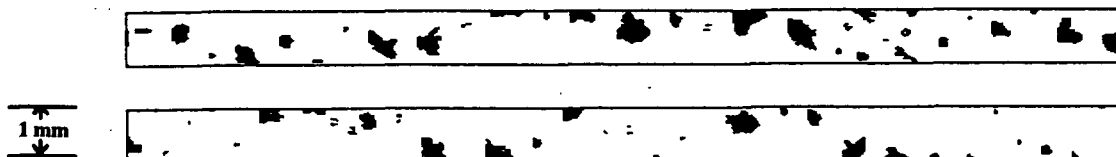
Pressure:

Pressure Altitude:

Aircraft Heading:



11/22/91 20:37:42.8234 20:37:43.1764 DeltaT: 0: 0.3530 TAS1 = 105.1 TAS2 = 105.1



11/22/91

20:40:00-20:41:50

Leg # 15b

Averages:

Temperature: -33.5 °C

Dew Point: Not Available

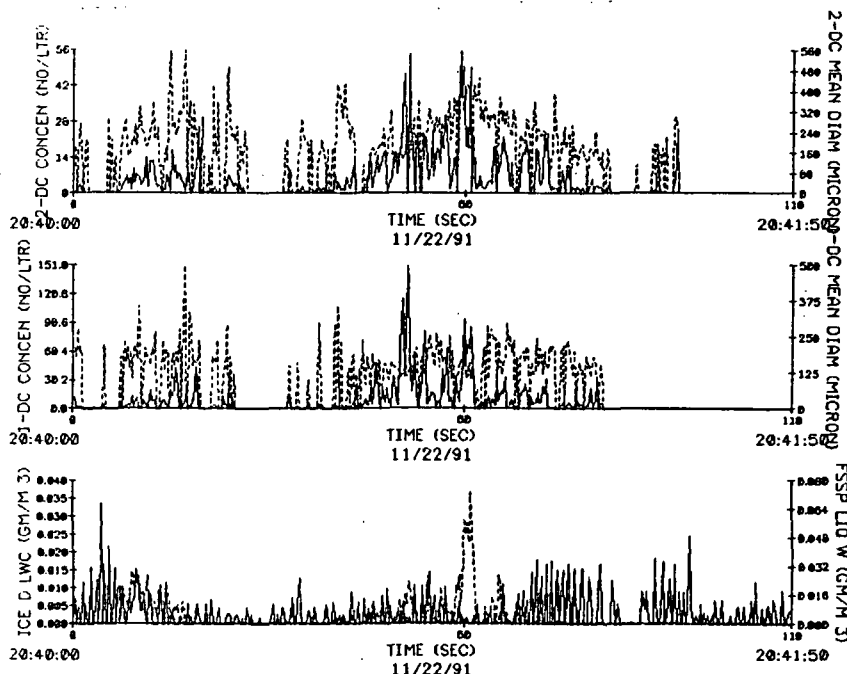
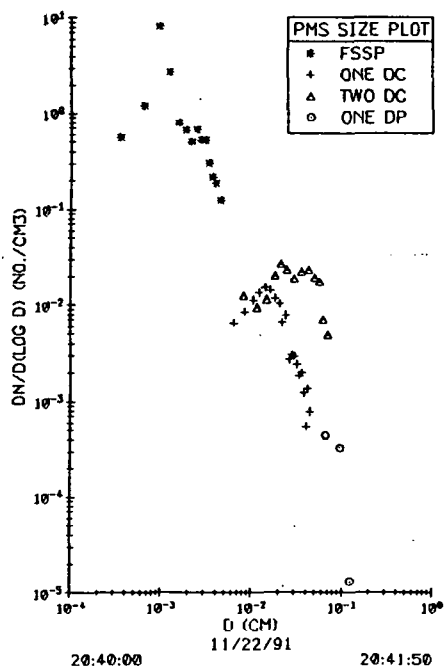
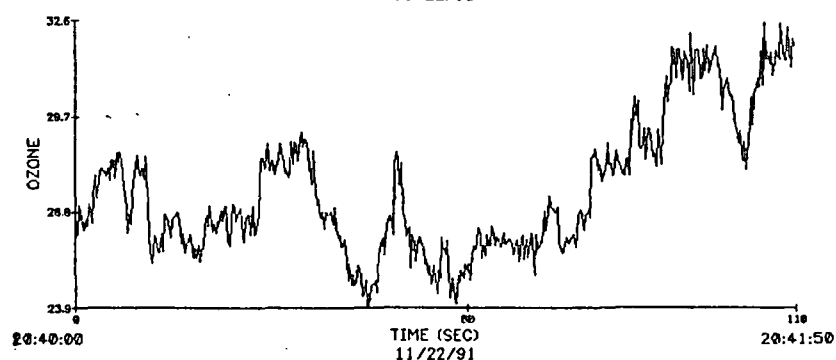
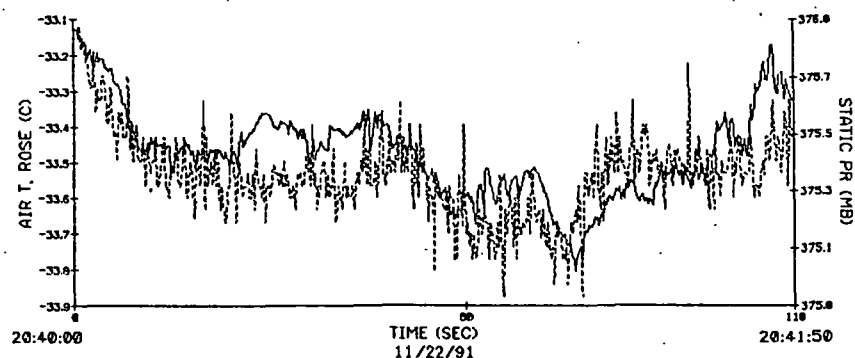
Wind Direction: 215.3 °

Wind Velocity: 36.77 m/sec

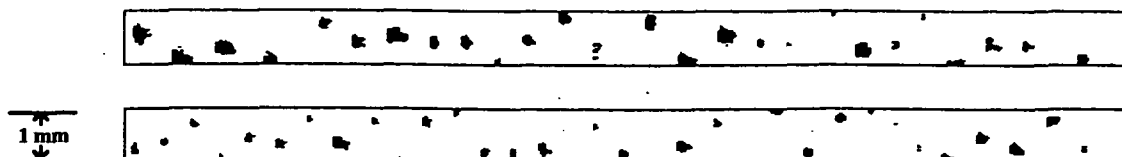
Pressure: 375.47 mb

Pressure Altitude: 7629.5 m

Aircraft Heading: 324.6 °



11/22/91 20:40:40.2685 20:40:42.6980 DeltaT: 0: 2.4295 TAS1 = 111.7 TAS2 = 112.6



11/22/91

20:43:05-20:45:37

Leg # 16

Averages:

Temperature:

Dew Point:

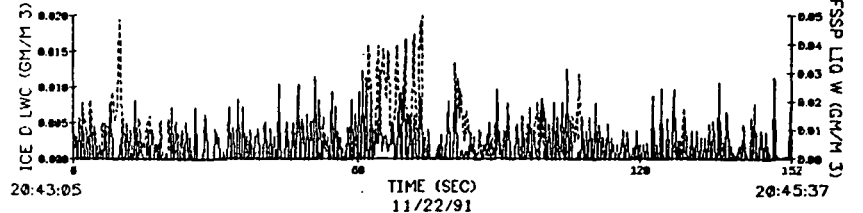
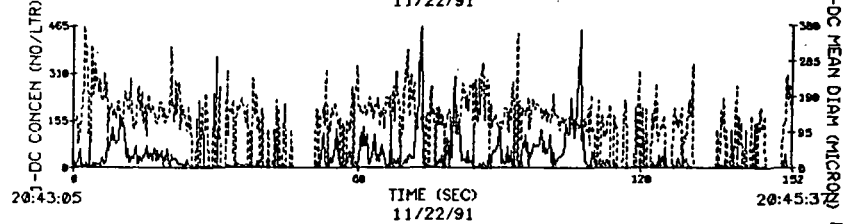
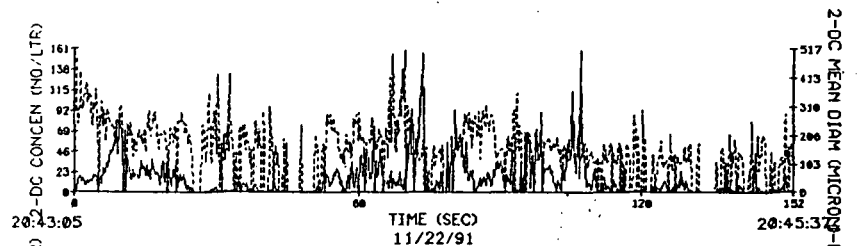
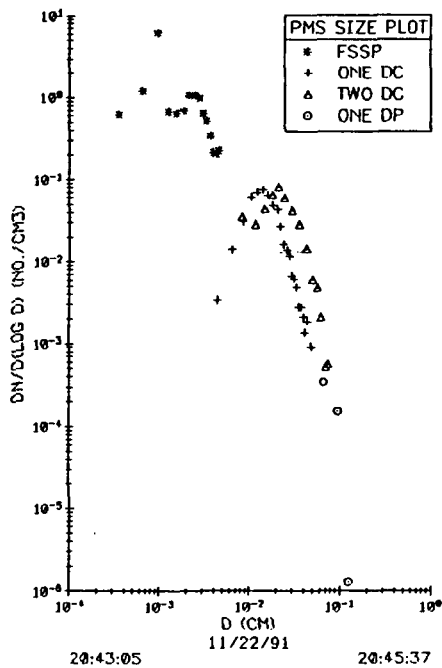
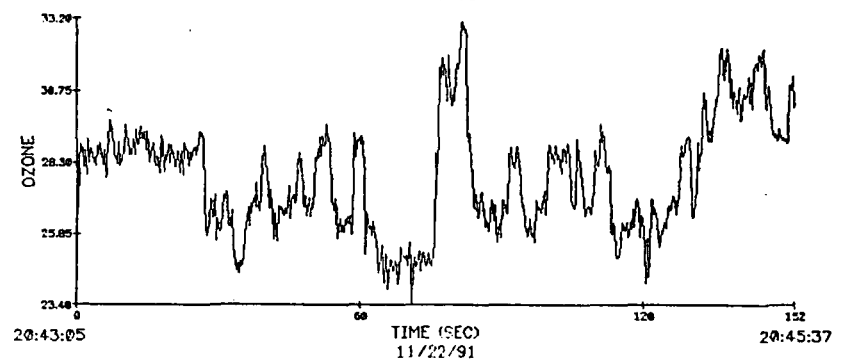
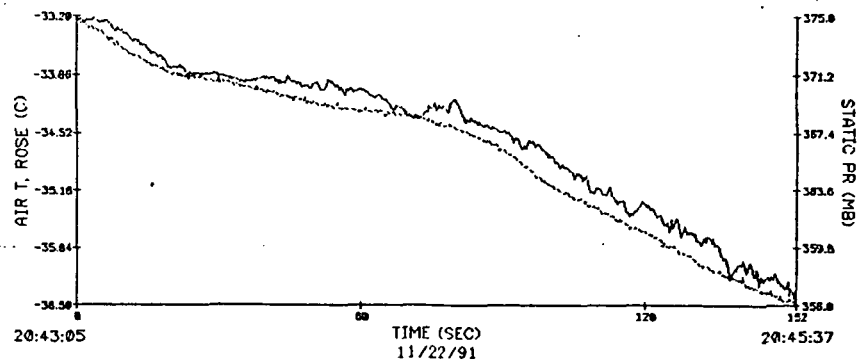
Wind Direction:

Wind Velocity:

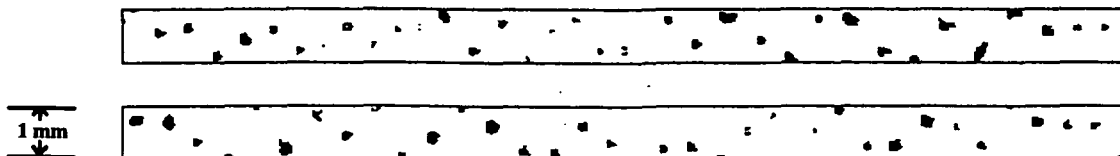
Pressure:

Pressure Altitude:

Aircraft Heading:



11/22/91 20:43:57.7497 20:43:58.3855 DeltaT: 0: 0.6358 TAS1 = 96.3 TAS2 = 96.3



11/22/91

20:47:10-20:52:40

Leg # 17

Averages:

Temperature: -38.8 °C

Dew Point: -41.5 °C

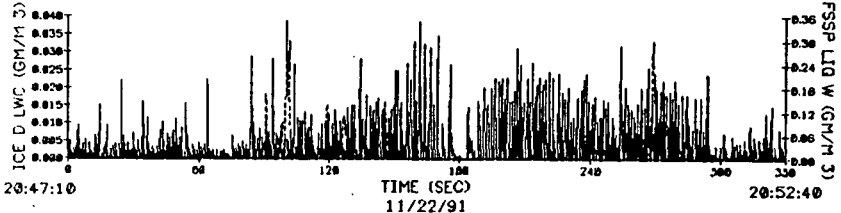
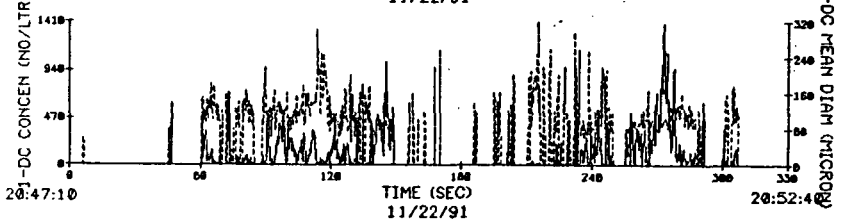
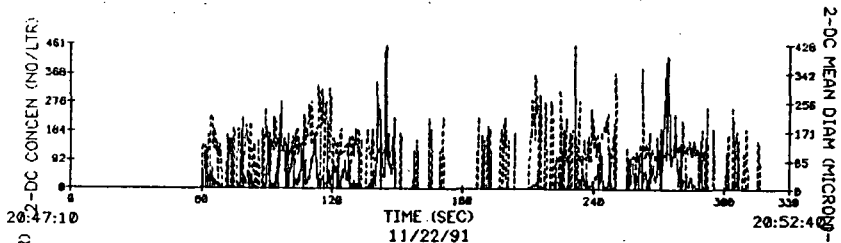
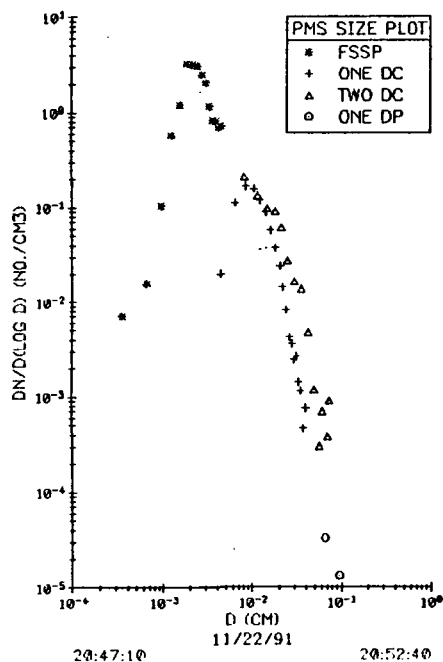
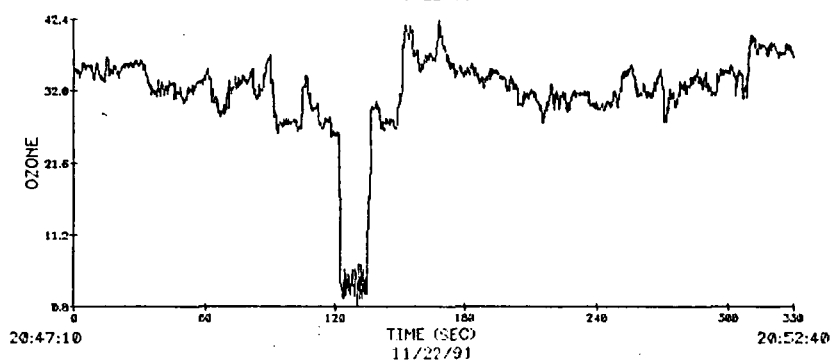
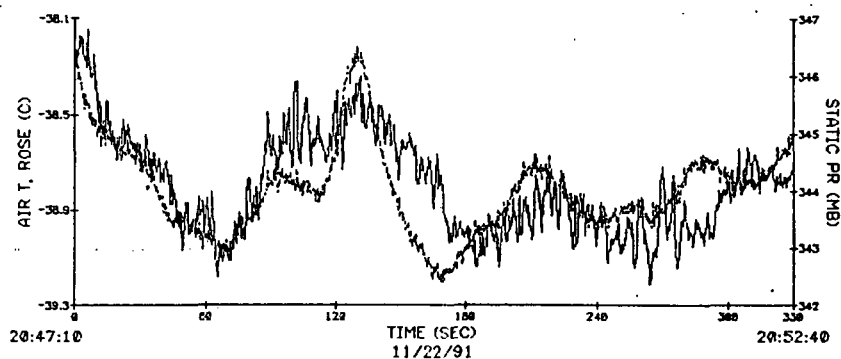
Wind Direction: 216.9 °

Wind Velocity: 40.92 m/sec

Pressure: 344.05 mb

Pressure Altitude: 8234.7 m

Aircraft Heading: 268.9 °



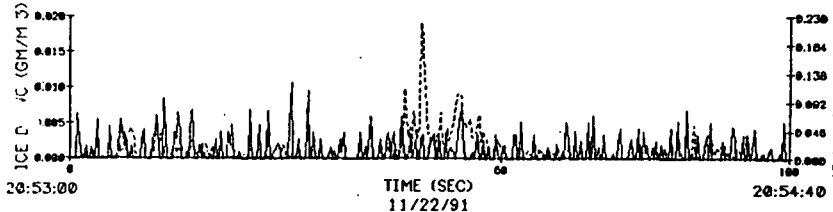
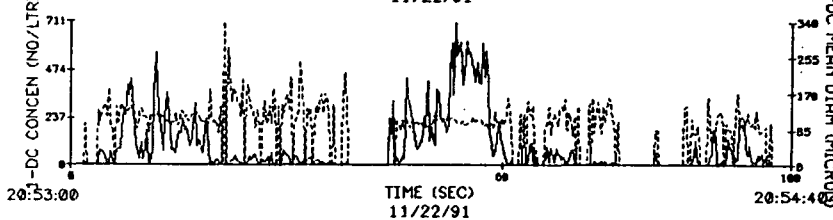
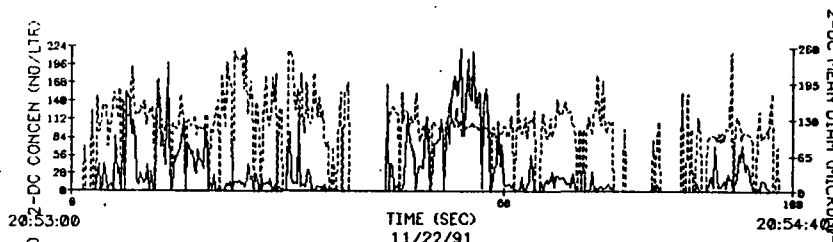
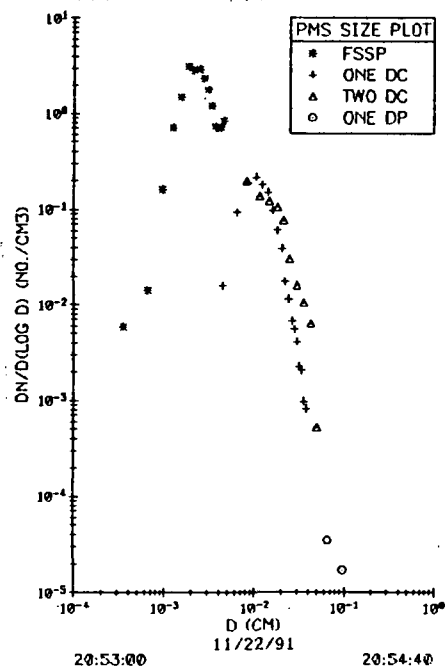
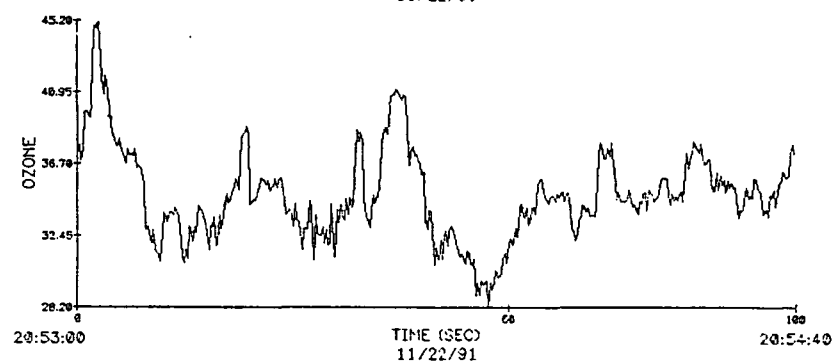
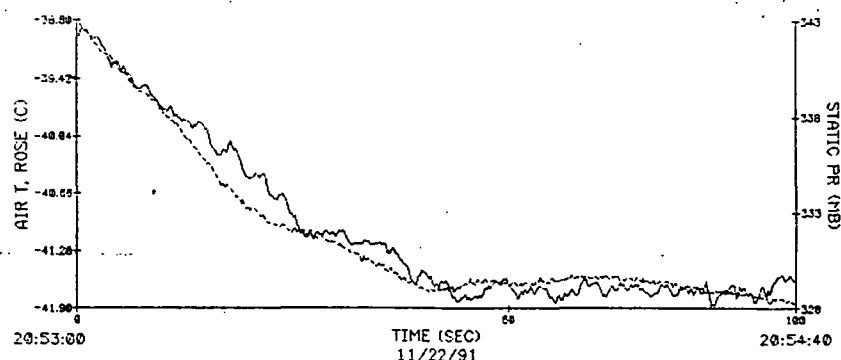
11/22/91 20:49:37.2699 20:49:37.4207 DeltaT: 0: 0.1508 TAS1 = 111.4 TAS2 = 111.4

1 mm

11/22/91

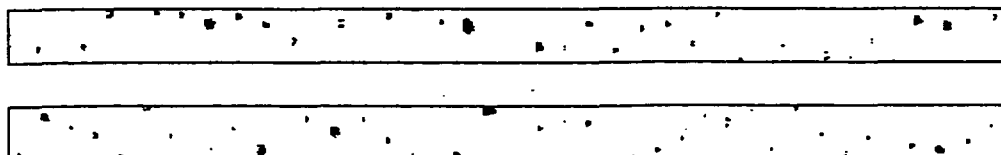
20:53:00-20:54:40

Leg # 18

Averages:**Temperature:** -41.2° C**Dew Point:** -43.5° C**Wind Direction:** 216.5°**Wind Velocity:** 41.71 m/sec**Pressure:** 330.92 mb**Pressure Altitude:** 8501.2 m**Aircraft Heading:** 110.6°

11/22/91 20:53:08.4650 20:53:08.6679 DeltaT: 0: 0.2029 TAS1 = 108.0 TAS2 = 108.0

1 mm



11/25/91

14:20:30-14:31:48

Leg # 1

Averages:

Temperature: -54.6 °C

Dew Point: -55.4 °C

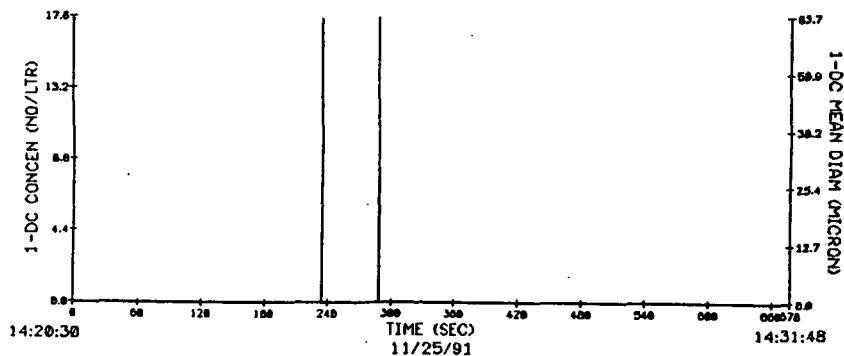
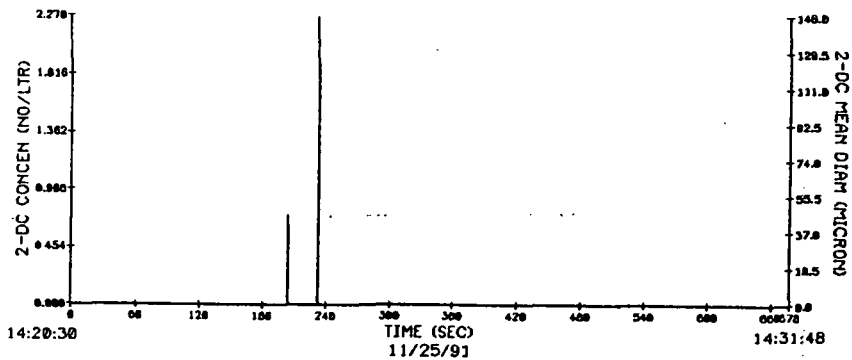
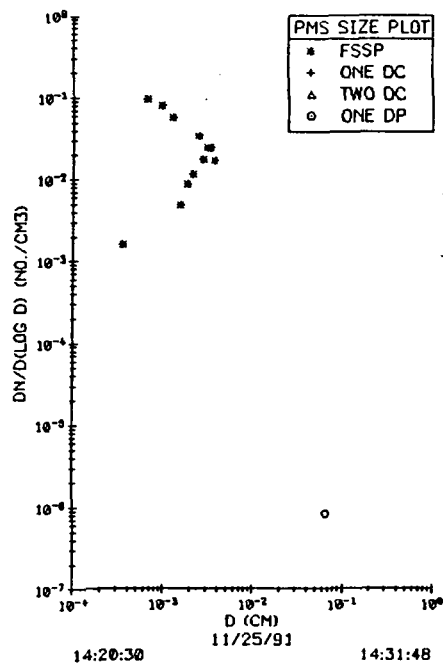
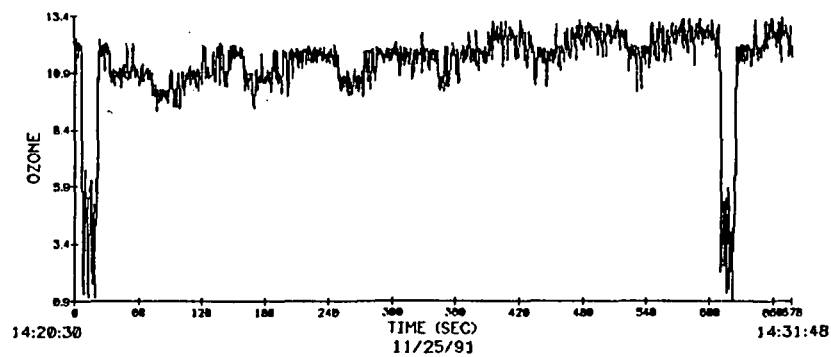
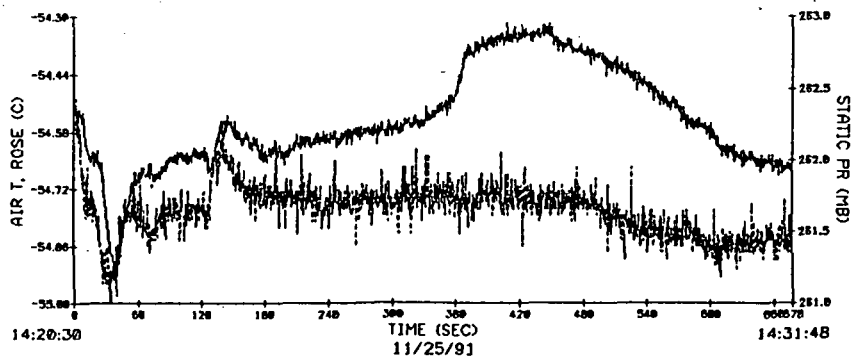
Wind Direction: 271.3 °

Wind Velocity: 46.92 m/sec

Pressure: 261.65 mb

Pressure Altitude: 10066.5 m

Aircraft Heading: 276.7 °



11/25/91 14:23:53.8168 14:24:12.7214 DeltaT: 0:18.9046 TAS1 = 132.6 TAS2 = 131.2

1 mm

11/25/91

14:35:00-14:38:50

Leg # 2

Averages:

Temperature: -51.8 ° C

Dew Point: -52.7 ° C

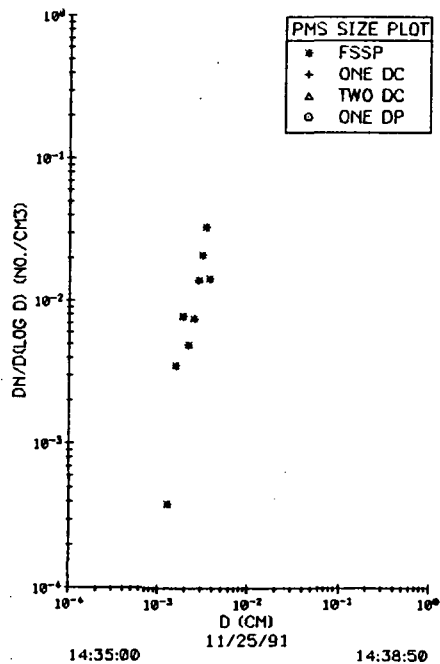
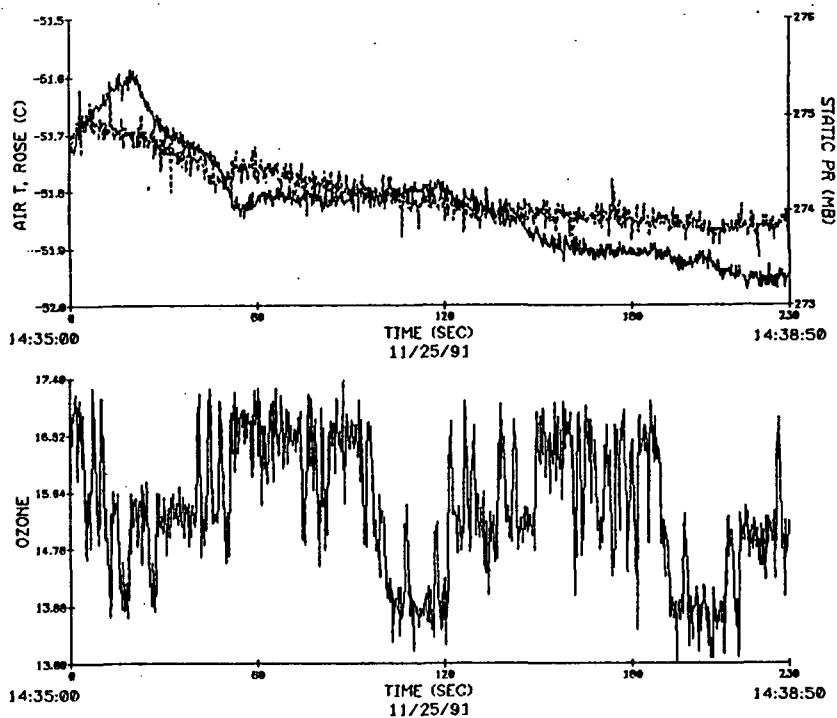
Wind Direction: 270.3 °

Wind Velocity: 43.23 m/sec

Pressure: 274.17 mb

Pressure Altitude: 9760.4 m

Aircraft Heading: 97.8 °



No 2-DC DATA

11/25/91

14:43:35-14:52:50

Leg # 3

Averages:

Temperature: -49.6 ° C

Dew Point: -50.0 ° C

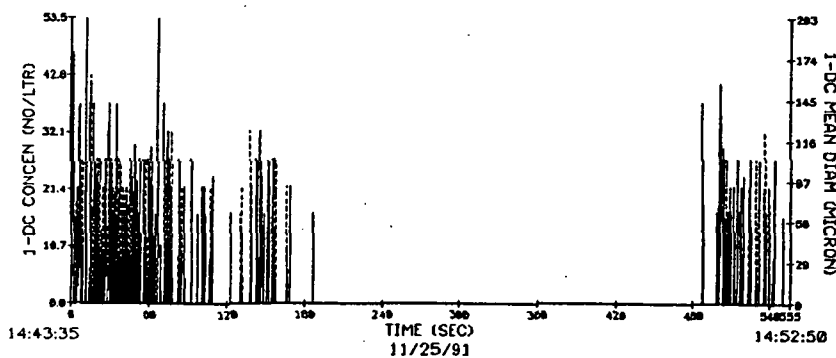
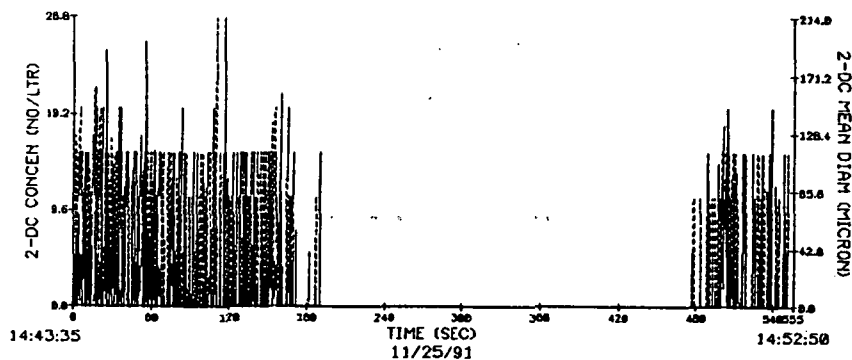
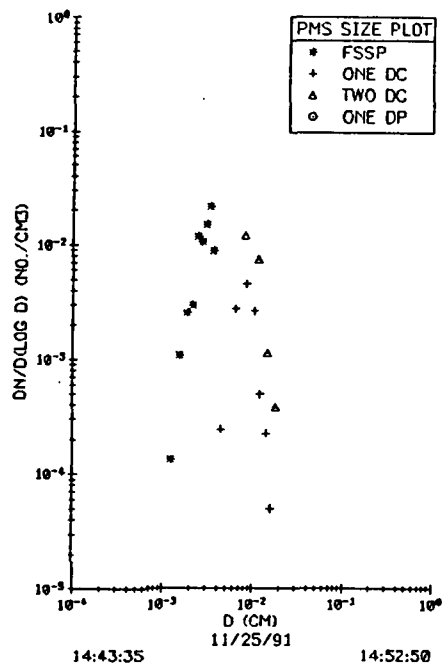
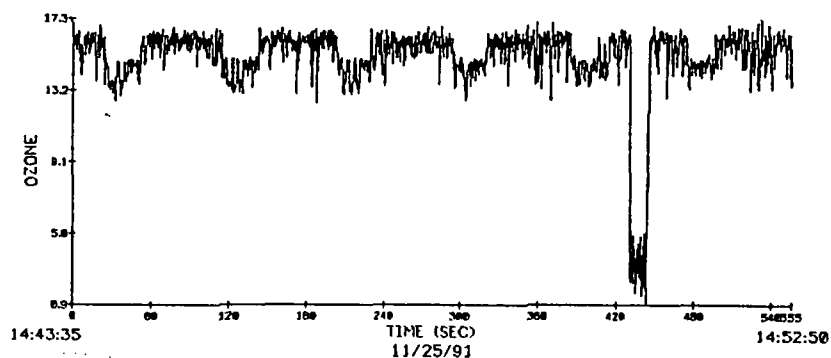
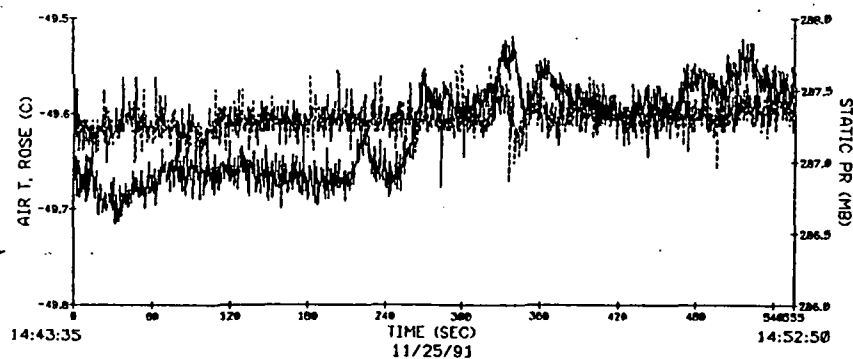
Wind Direction: 269.1 °

Wind Velocity: 42.47 m/sec

Pressure: 287.31 mb

Pressure Altitude: 9451.2 m

Aircraft Heading: 275.9 °



11/25/91 14:40:38.0141 14:40:41.5421 DeltaT: 0: 3.5280 TAS1 = 129.0 TAS2 = 128.5

1 mm

11/25/91

14:56:50-15:00:35

Leg # 4

Averages:

Temperature: -47.2 °C

Dew Point: -48.0 °C

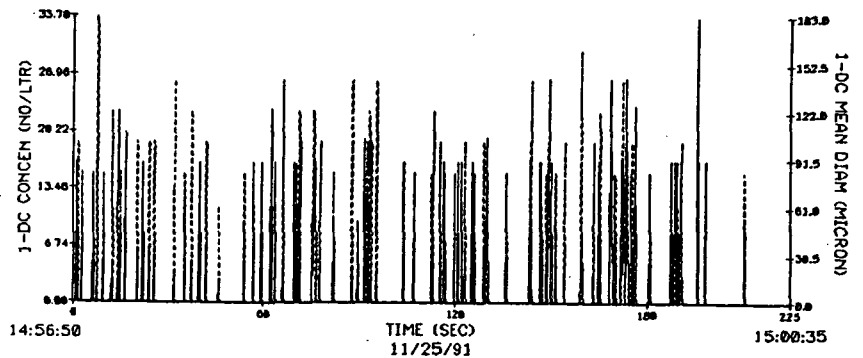
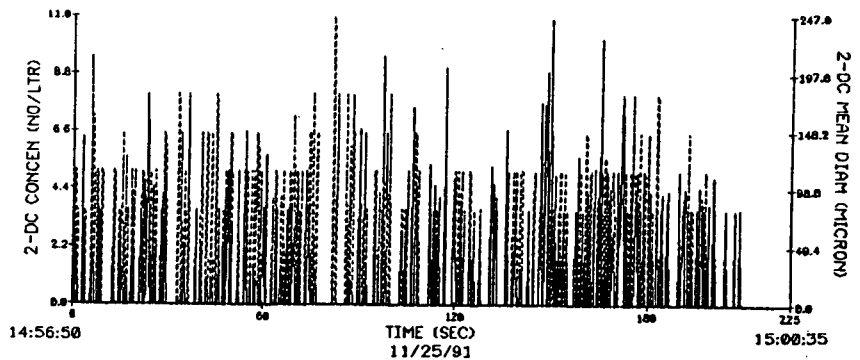
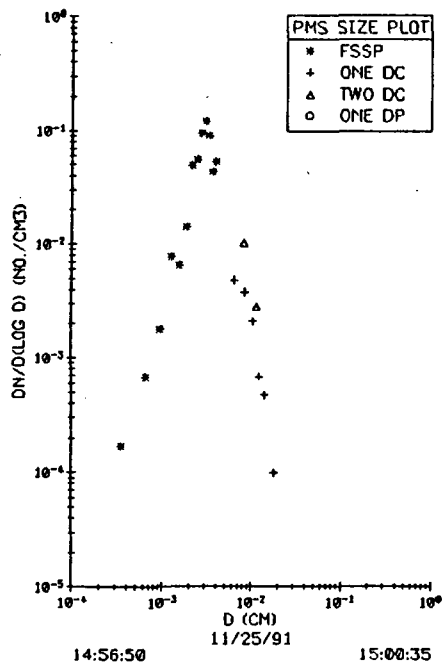
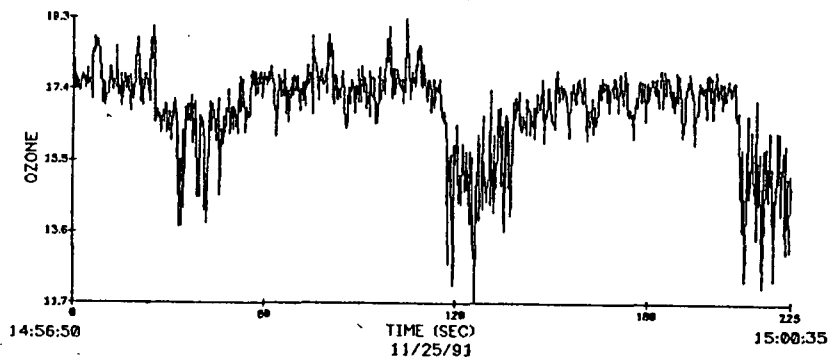
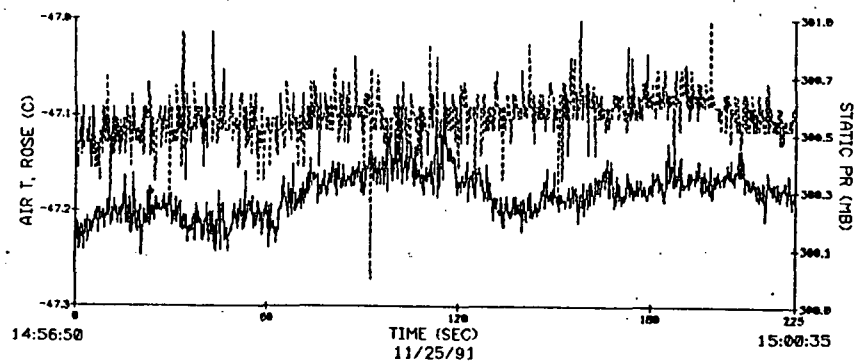
Wind Direction: 274.6 °

Wind Velocity: 40.38 m/sec

Pressure: 300.66 mb

Pressure Altitude: 9148.4 m

Aircraft Heading: 102.8 °



11/25/91 14:51:13.1236 14:51:44.7533 DeltaT: 0:31.6297 TAS1 = 120.9 TAS2 = 120.6

1 mm

11/25/91

15:07:15-15:14:55

Leg # 5

Averages:

Temperature: -44.9 °C

Dew Point: -46.2 °C

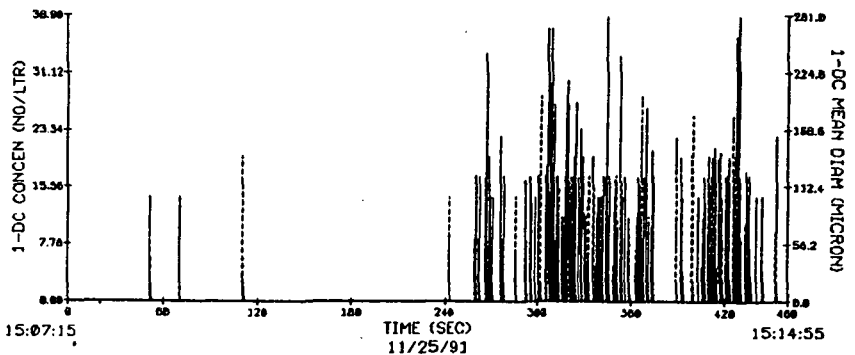
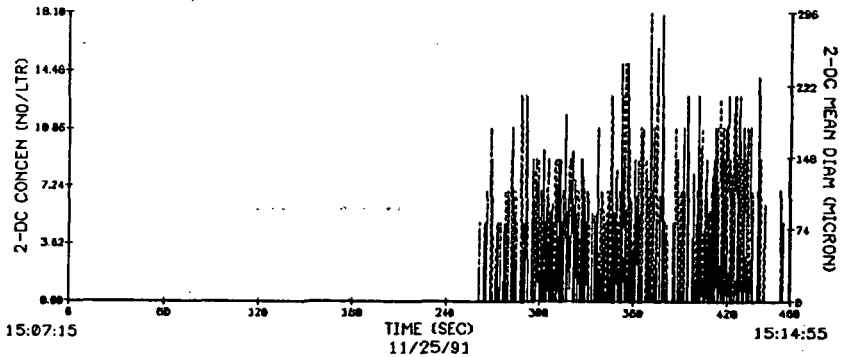
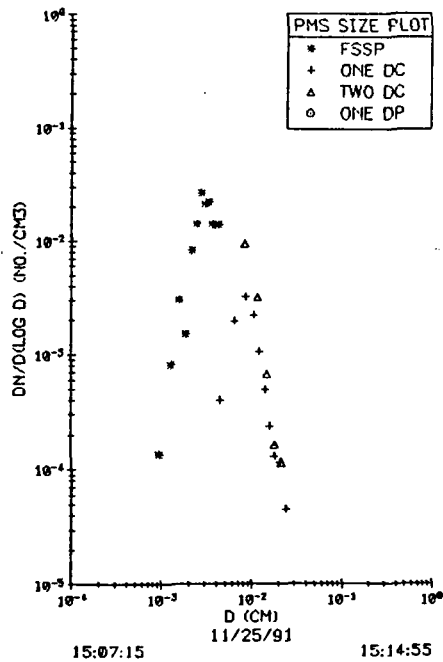
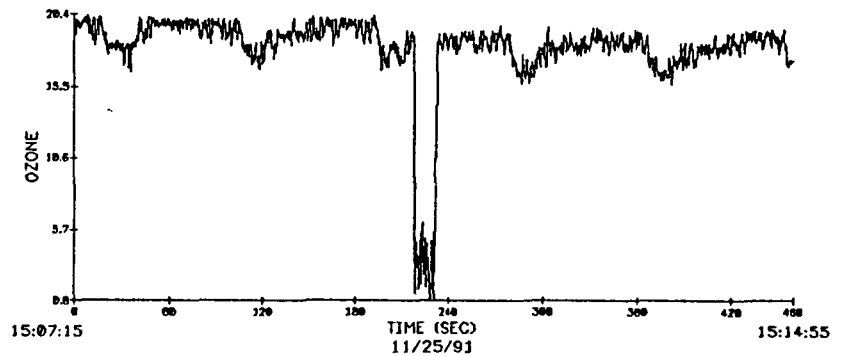
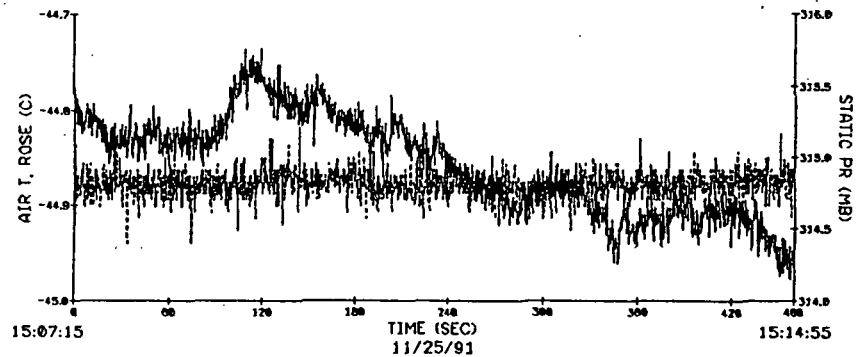
Wind Direction: 276.5 °

Wind Velocity: 40.50 m/sec

Pressure: 314.82 mb

Pressure Altitude: 8839.2 m

Aircraft Heading: 279.0 °



11/25/91 15:12:16.8048 15:12:21.7761 DeltaT: 0: 4.9713 TAS1 = 122.6 TAS2 = 122.7

1 mm

11/25/91

15:18:15-15:22:10

Leg # 6

Averages:

Temperature: -43.0 °C

Dew Point: -43.2 °C

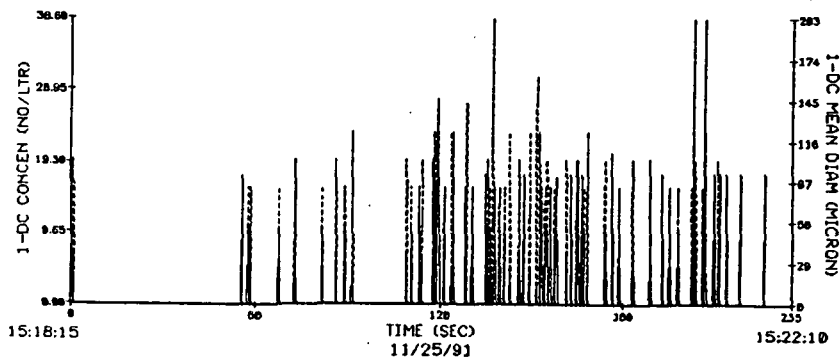
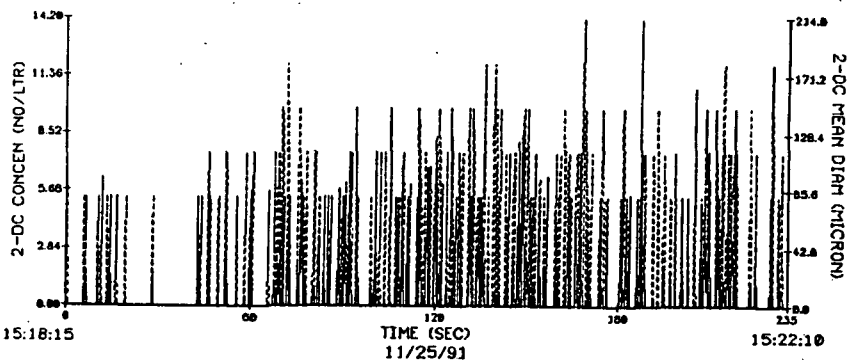
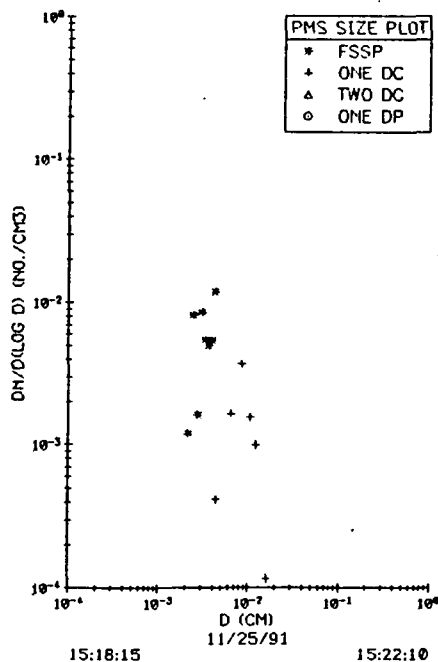
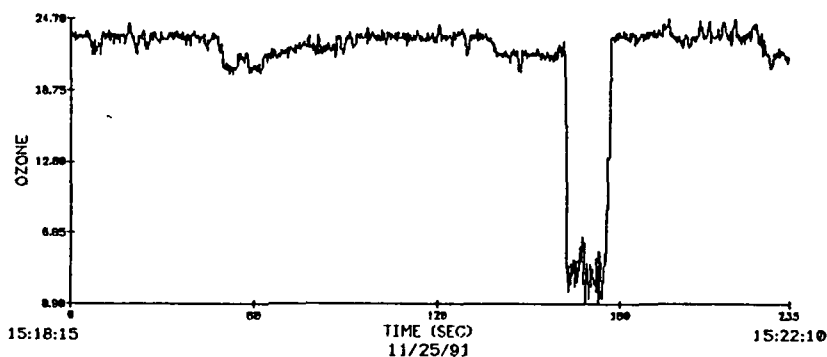
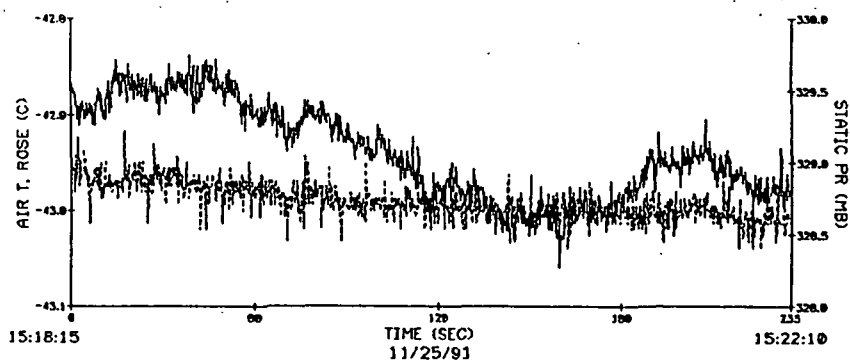
Wind Direction: 280.5 °

Wind Velocity: 37.45 m/sec

Pressure: 328.72 mb

Pressure Altitude: 8546.1 m

Aircraft Heading: 99.6 °



11/25/91 15:20:25.2619 15:20:46.3851 DeltaT: 0:21.1232 TAS1 = 118.6 TAS2 = 118.7

1 mm

11/25/91

15:26:20-15:33:35

Leg # 7

Averages:

Temperature: -41.5 °C

Dew Point: -41.5 °C

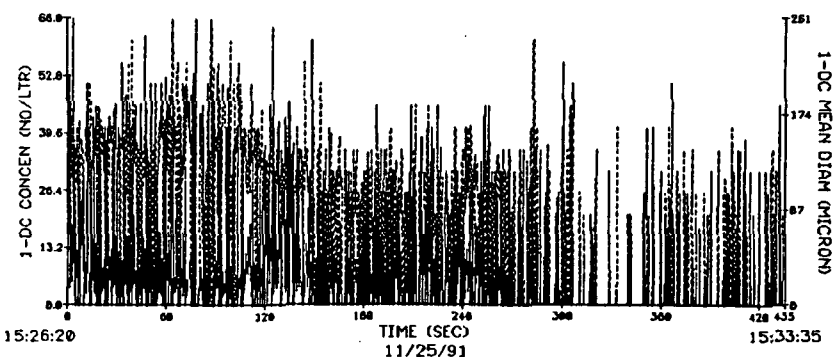
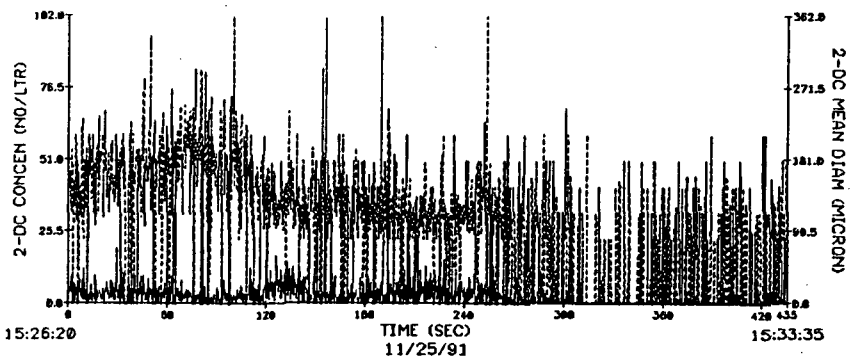
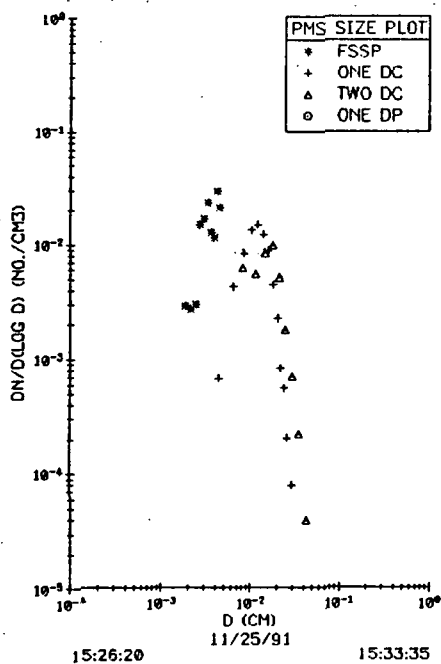
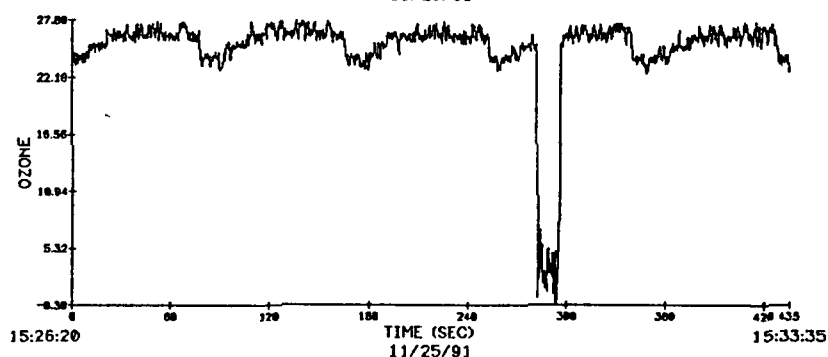
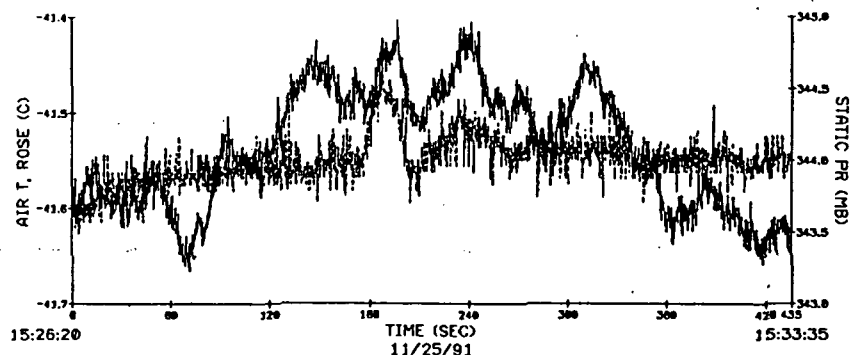
Wind Direction: 280.8 °

Wind Velocity: 35.95 m/sec

Pressure: 344.00 mb

Pressure Altitude: 8235.5 m

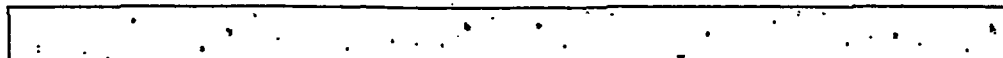
Aircraft Heading: 280.3 °



11/25/91 15:30:00.9690 15:30:05.4220 DeltaT: 0: 4.4530 TAS1 = 116.7 TAS2 = 116.8



1 mm



11/25/91

15:37:10-15:40:35

Leg # 8

Averages:

Temperature: -39.1 °C

Dew Point: -39.5 °C

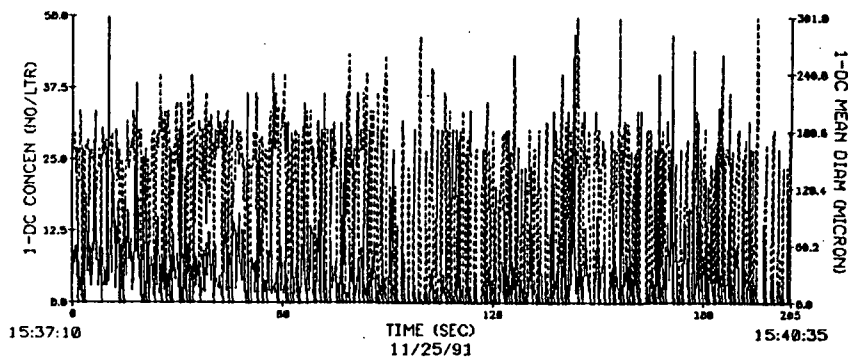
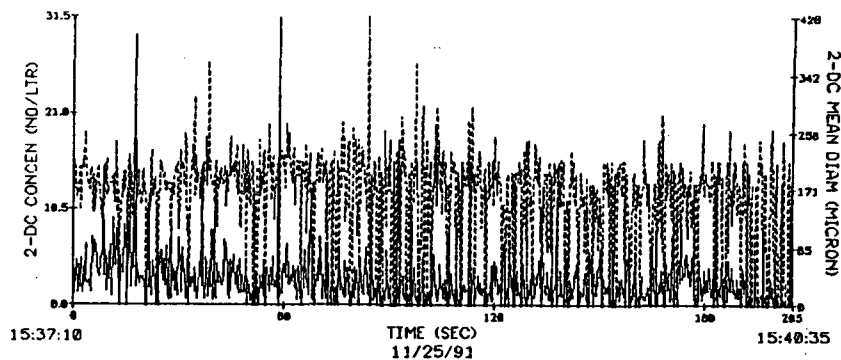
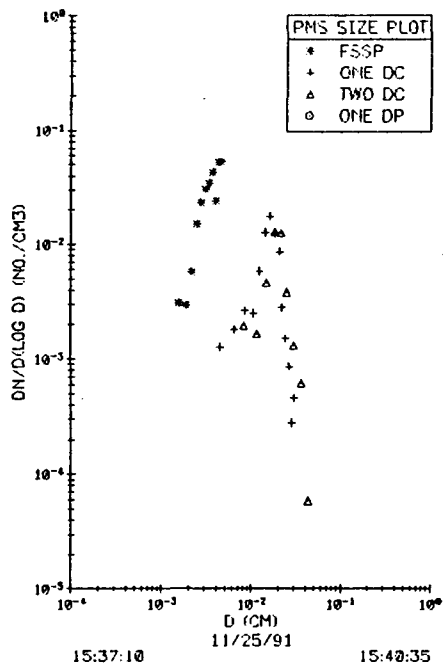
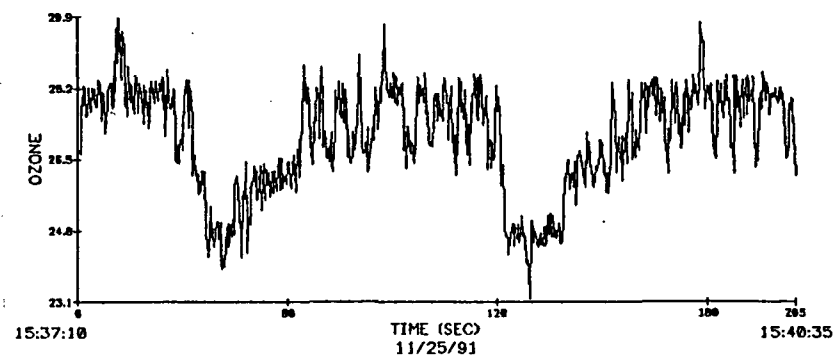
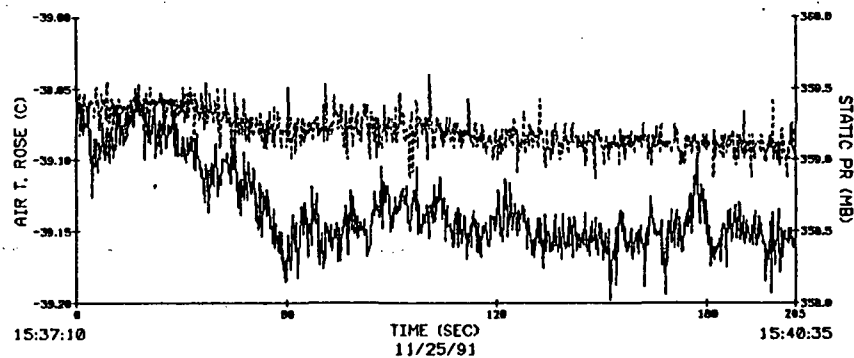
Wind Direction: 280.3 °

Wind Velocity: 32.91 m/sec

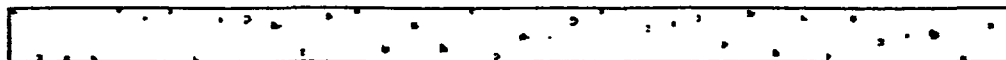
Pressure: 359.20 mb

Pressure Altitude: 7937.4 m

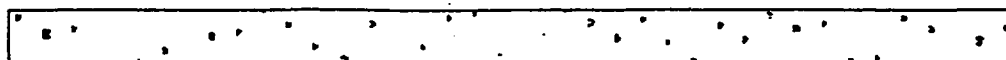
Aircraft Heading: 101.1 °



11/25/91 15:39:48.3522 15:39:56.7751 DeltaT: 0: 8.4229 TAS1 = 110.3 TAS2 = 109.9



1 mm



11/25/91

15:42:45-15:50:10

Leg # 9

Averages:

Temperature: -36.6 °C

Dew Point: -38.5 °C

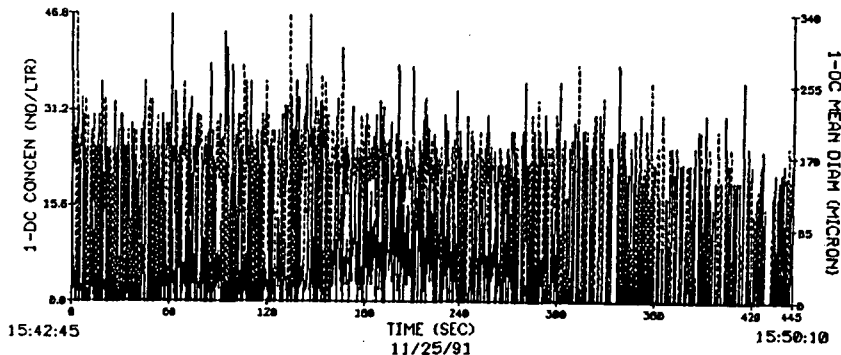
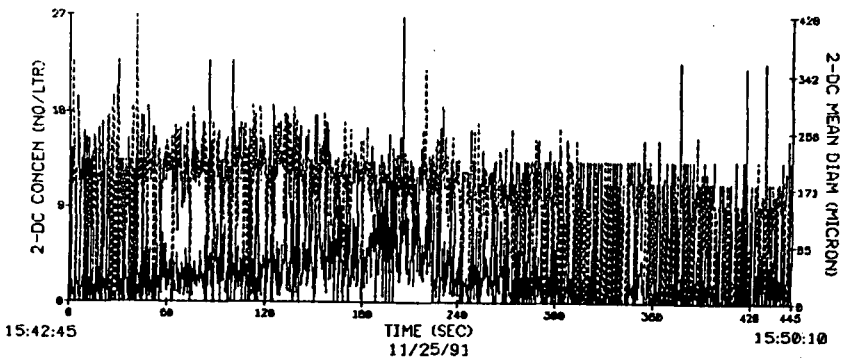
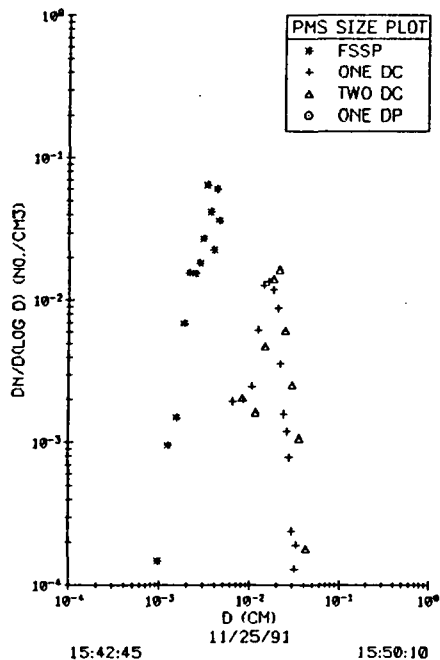
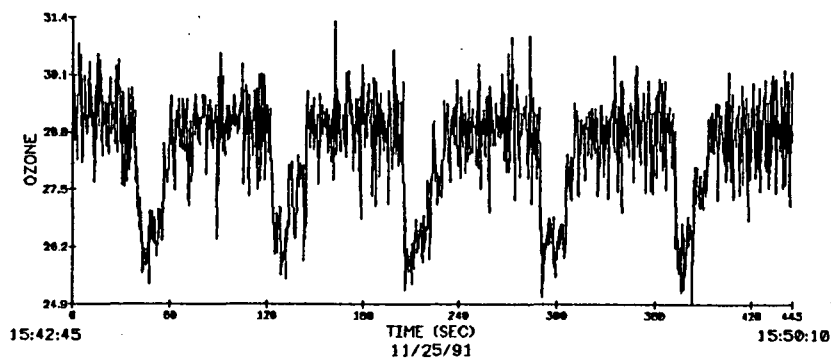
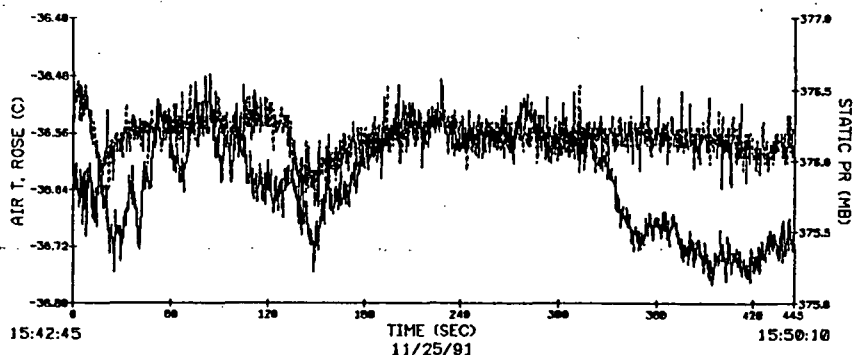
Wind Direction: 283.5 °

Wind Velocity: 30.68 m/sec

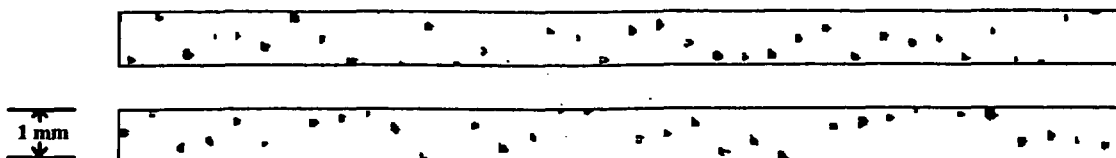
Pressure: 376.18 mb

Pressure Altitude: 7616.2 m

Aircraft Heading: 280.7 °



11/25/91 15:44:30.9826 15:44:35.9413 DeltaT: 0: 4.9587 TAS1 = 105.9 TAS2 = 106.1



C-2

11/25/91

15:53:00-15:56:20

Leg # 10

Averages:

Temperature: -34.3 ° C

Dew Point: -40.4 ° C

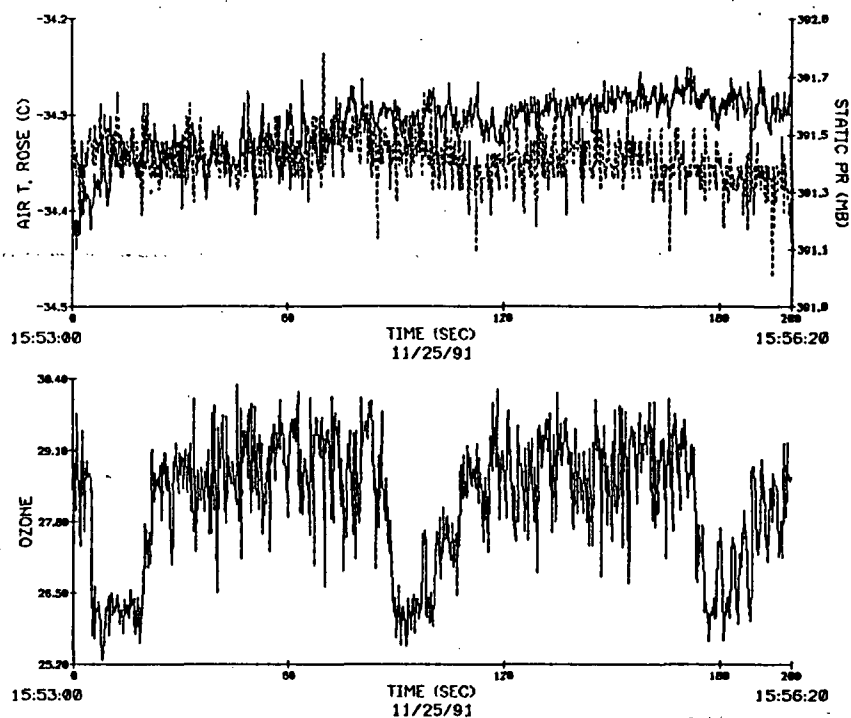
Wind Direction: 288.7 °

Wind Velocity: 28.92 m/sec

Pressure: 391.49 mb

Pressure Altitude: 7336.7 m

Aircraft Heading: 97.5 °



No Cloud

11/25/91

16:00:10-16:06:40

Leg # 11

Averages:

Temperature: -36.9 °C

Dew Point: Not Available

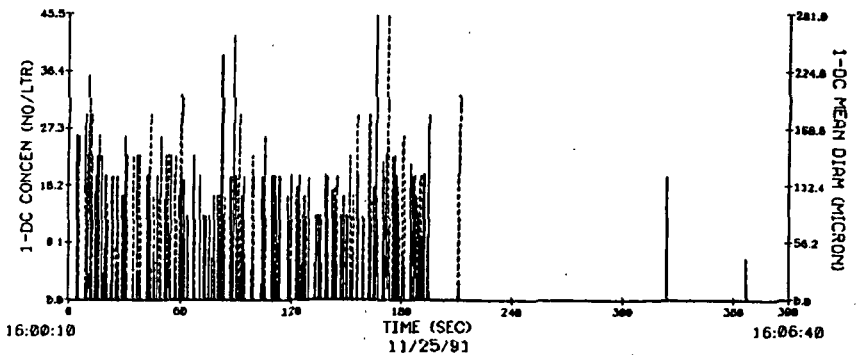
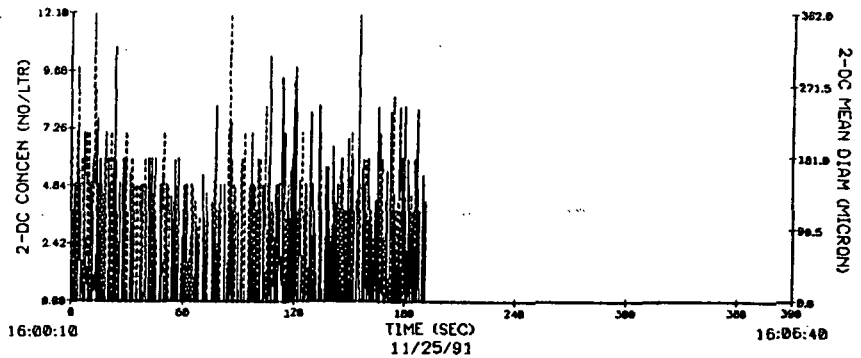
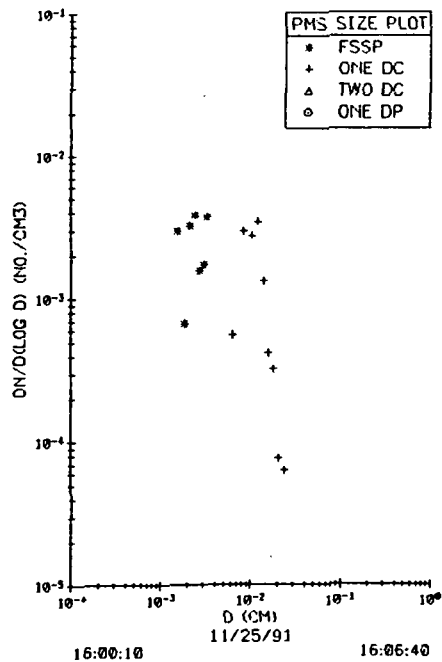
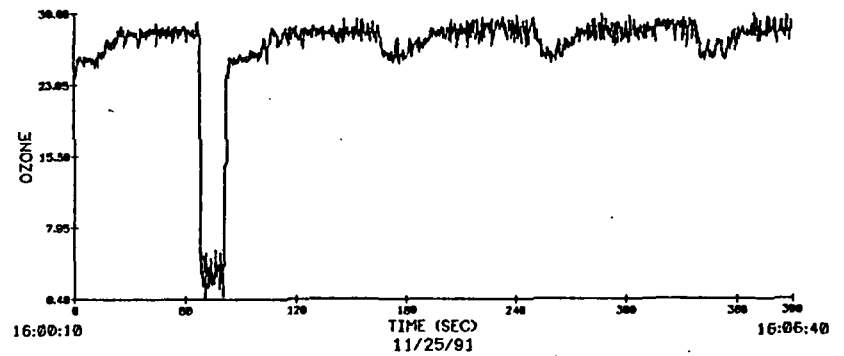
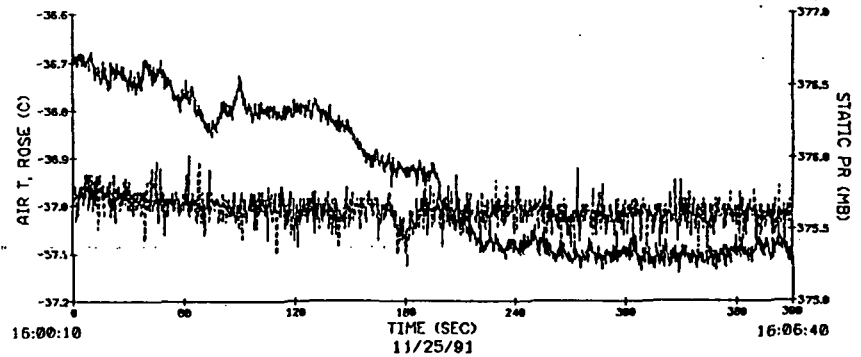
Wind Direction: 286.6 °

Wind Velocity: 29.37 m/sec

Pressure: 375.63 mb

Pressure Altitude: 7626.4 m

Aircraft Heading: 281.9 °



11/25/91 16:03:10.0768 16:03:21.7082 DeltaT: 0:11.6314 TAS1 = 103.0 TAS2 = 102.8

1 mm

11/25/91

16:09:30-16:12:50

Leg # 12

Averages:

Temperature: -39.1 °C

Dew Point: -39.7 °C

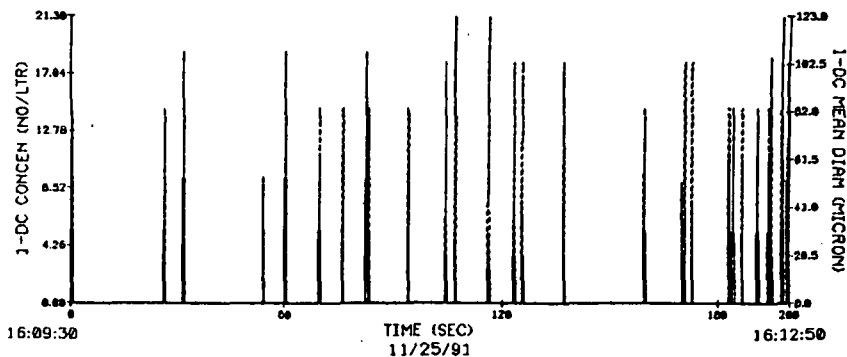
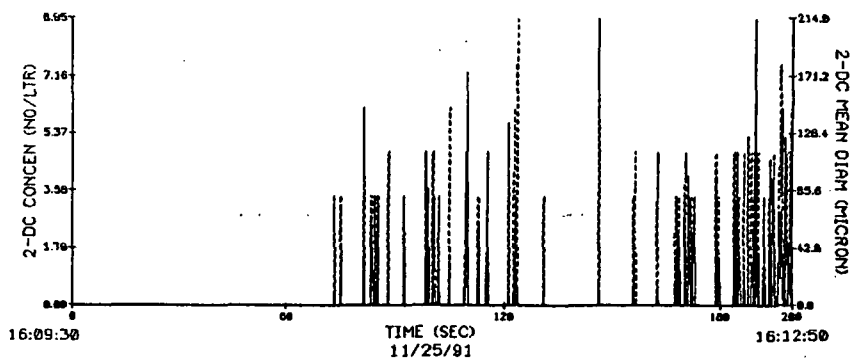
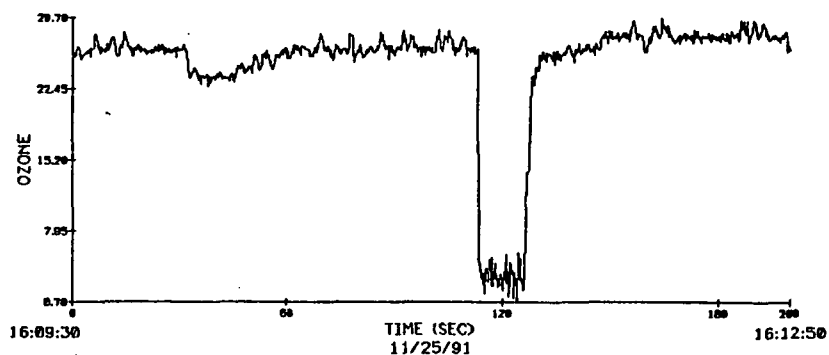
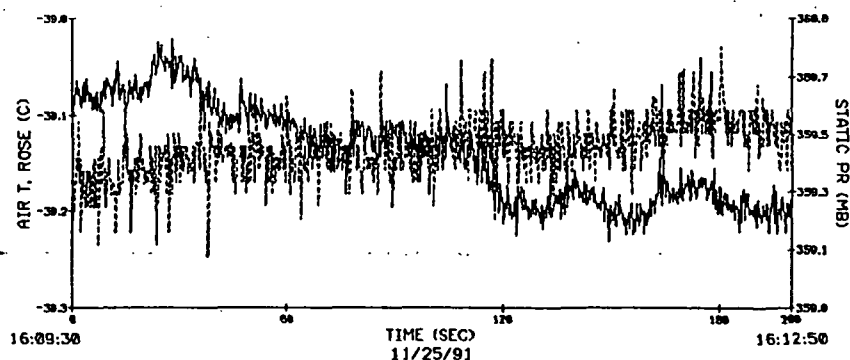
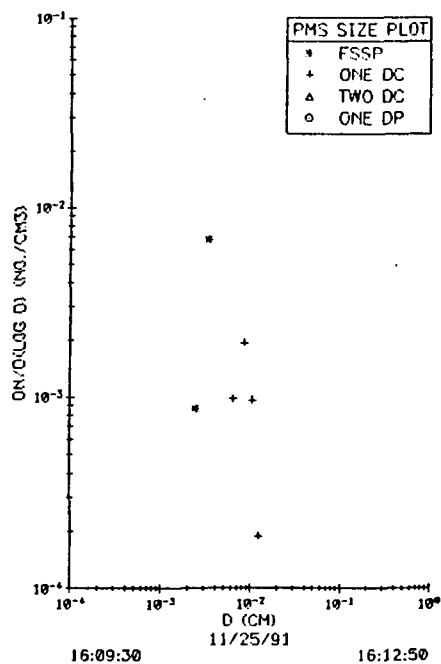
Wind Direction: 281.3 °

Wind Velocity: 30.90 m/sec

Pressure: 359.55 mb

Pressure Altitude: 7930.7 m

Aircraft Heading: 98.1 °



11/25/91 16:11:06.6191 16:12:13.9796 DeltaT: 1: 7.3605 TAS1 = 112.9 TAS2 = 114.3

1 mm

11/25/91

16:17:35-16:23:50

Leg # 13

Averages:

Temperature: -41.4 ° C

Dew Point: -43.1 ° C

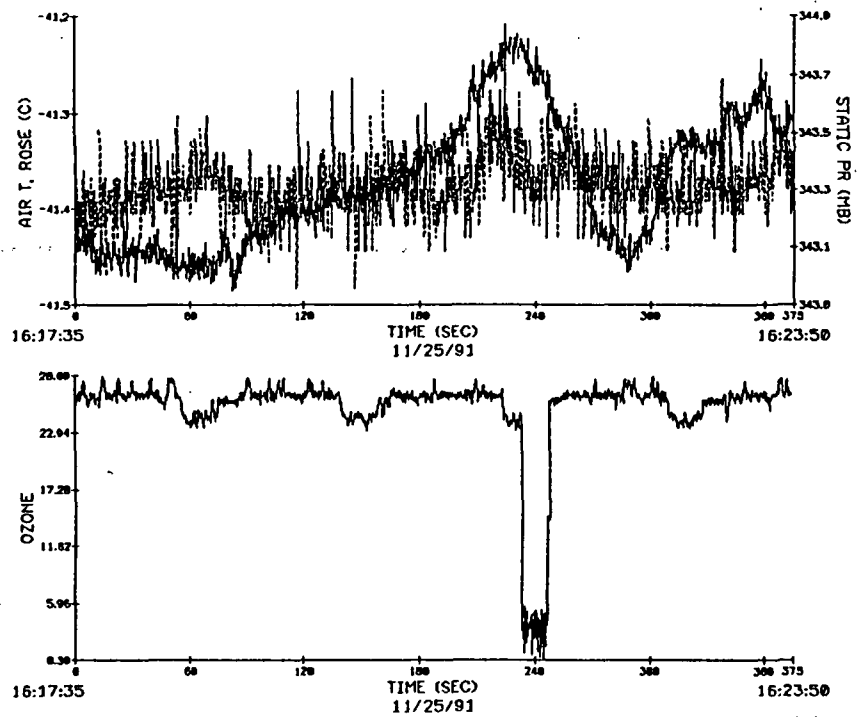
Wind Direction: 278.9 °

Wind Velocity: 34.21 m/sec

Pressure: 343.41 mb

Pressure Altitude: 8247.3 m

Aircraft Heading: 279.7 °



No Cloud

11/25/91

16:26:40-16:29:10

Leg # 14

Averages:

Temperature: -42.7°C

Dew Point: -45.4°C

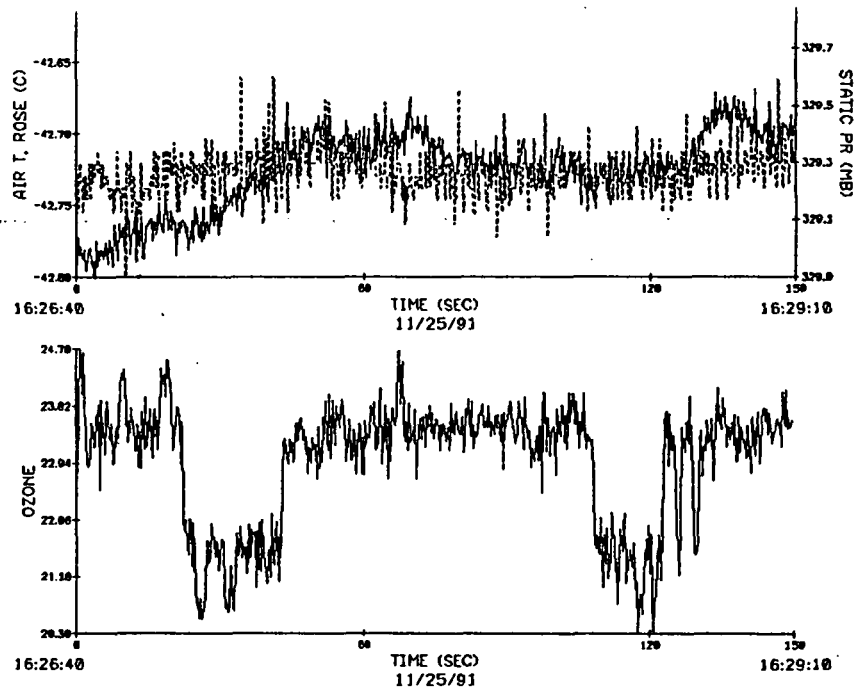
Wind Direction: 278.1°

Wind Velocity: 38.04 m/sec

Pressure: 329.30 mb

Pressure Altitude: 8534.3 m

Aircraft Heading: 100.8°



No Cloud

11/25/91

16:32:50-16:39:30

Leg # 15

Averages:

Temperature: -45.1 ° C

Dew Point: -47.5 ° C

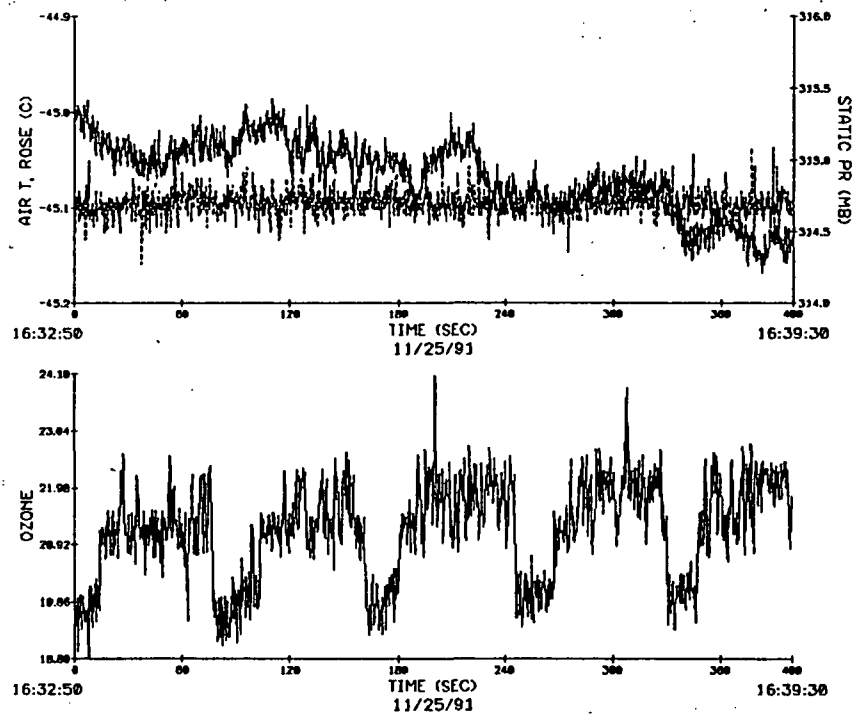
Wind Direction: 272.6 °

Wind Velocity: 41.48 m/sec

Pressure: 314.70 mb

Pressure Altitude: 8841.6 m

Aircraft Heading: 276.7 °



No Cloud

11/25/91

16:58:10-17:01:10

Leg # 16

Averages:

Temperature: -51.8 °C

Dew Point: Not Available

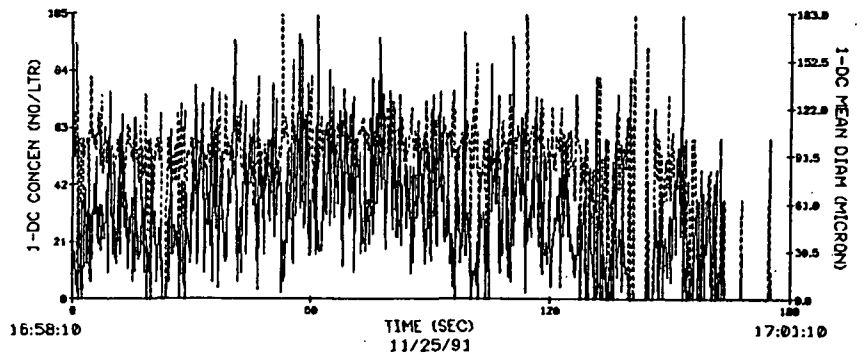
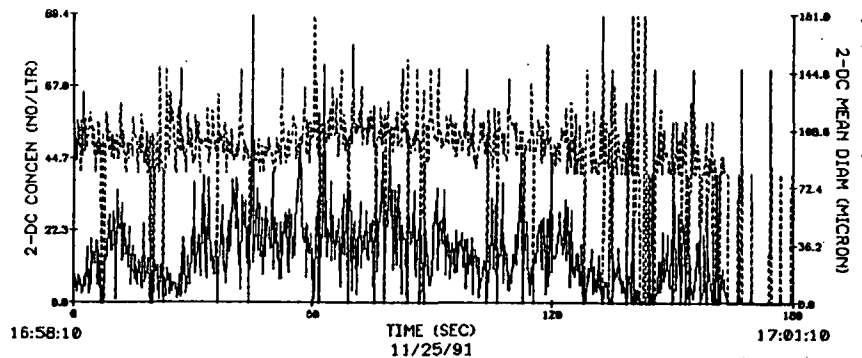
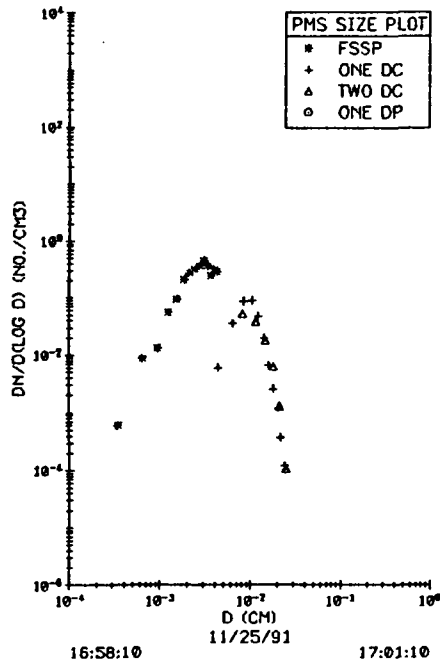
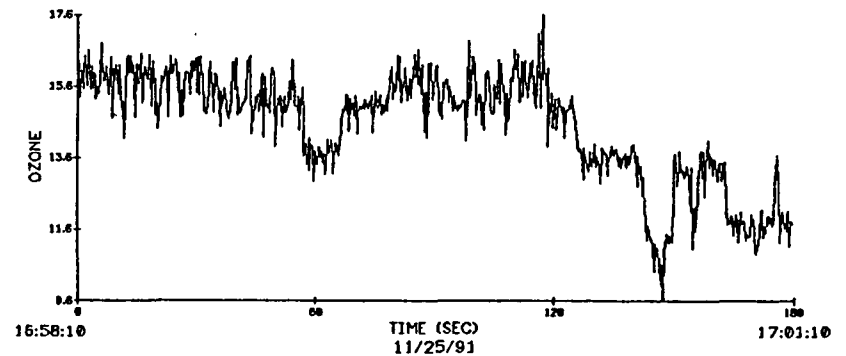
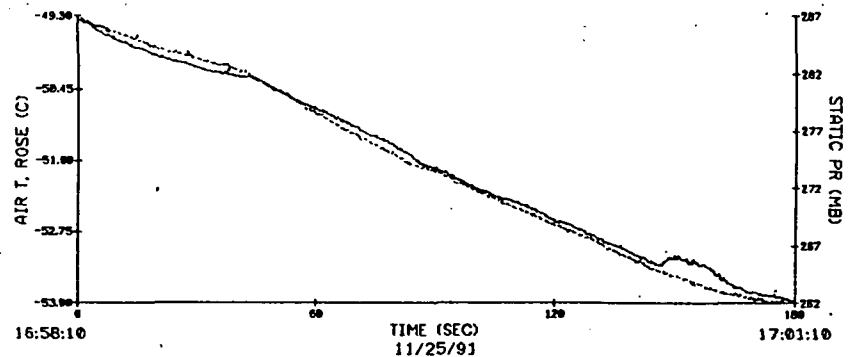
Wind Direction: 261.6 °

Wind Velocity: 42.03 m/sec

Pressure: 273.04 mb

Pressure Altitude: 9789.9 m

Aircraft Heading: 226.5 °



11/25/91 16:58:45.7932 16:58:46.6963 DeltaT: 0: 0.9031 TAS1 = 126.4 TAS2 = 126.4

1 mm

11/25/91

17:01:30-17:03:10

Leg # 17

Averages:

Temperature: -53.8 °C

Dew Point: Not Available

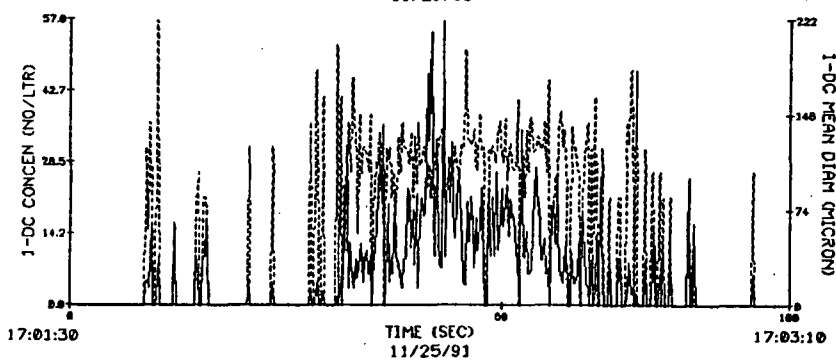
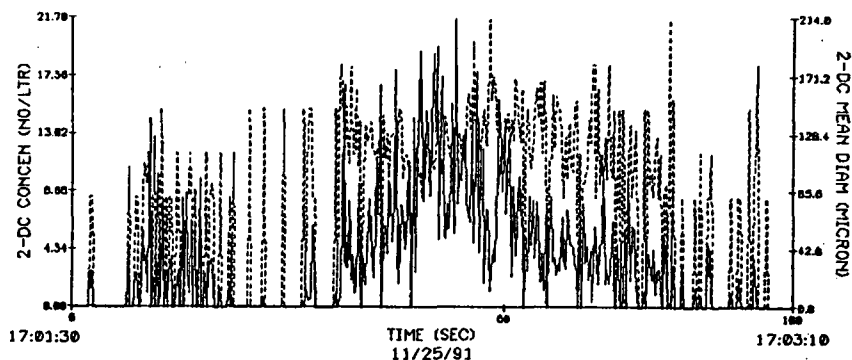
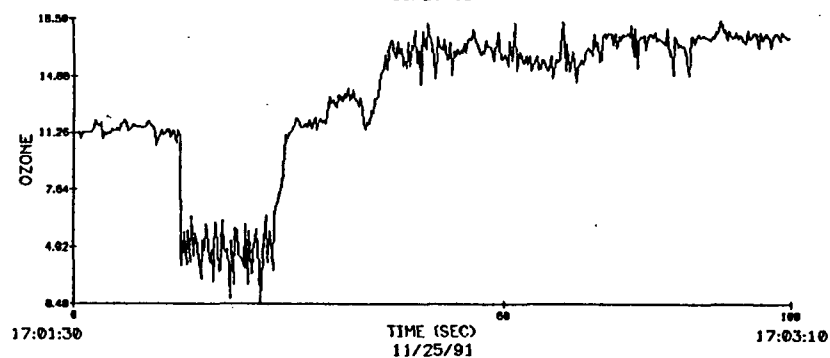
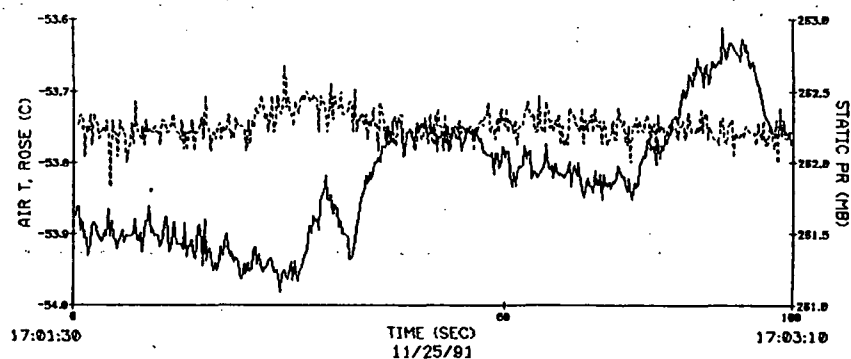
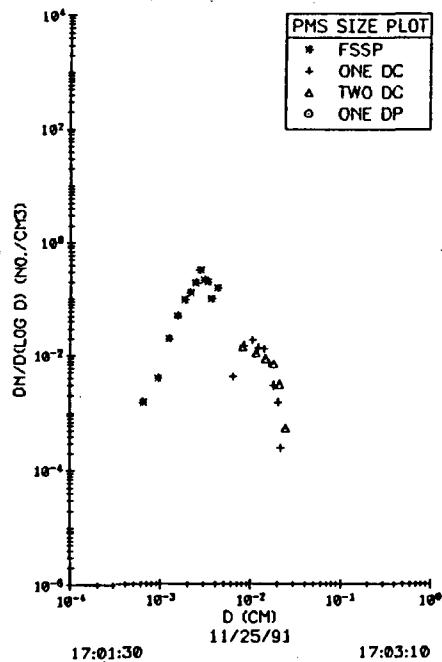
Wind Direction: 263.8 °

Wind Velocity: 44.25 m/sec

Pressure: 262.26 mb

Pressure Altitude: 10051.2 m

Aircraft Heading: 70.8 °



11/25/91

17:02:16.9024

17:02:18.1150

DeltaT: 0: 1.2126

TAS1 = 128.1

TAS2 = 127.9

1 mm

11/25/91

17:05:10-17:07:00

Leg # 18

Averages:

Temperature: -53.9 °C

Dew Point: Not Available

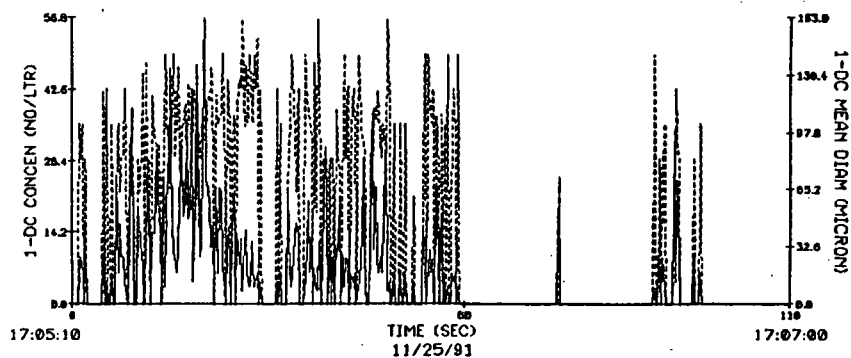
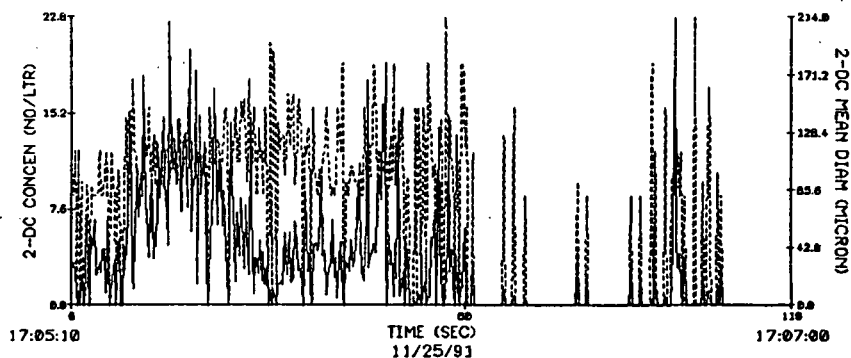
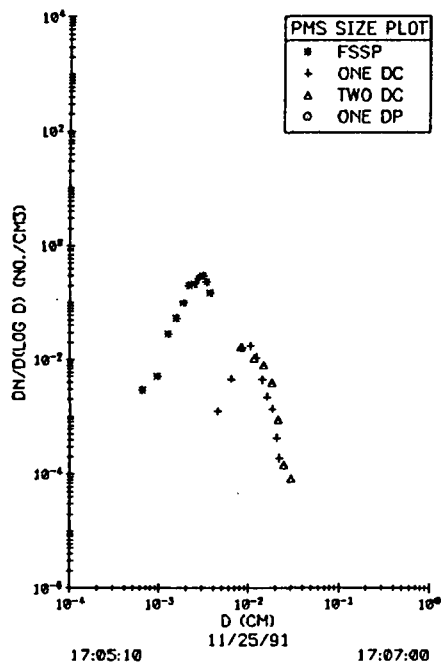
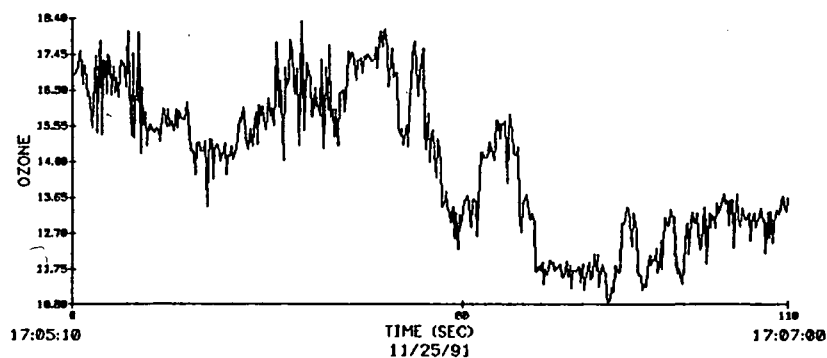
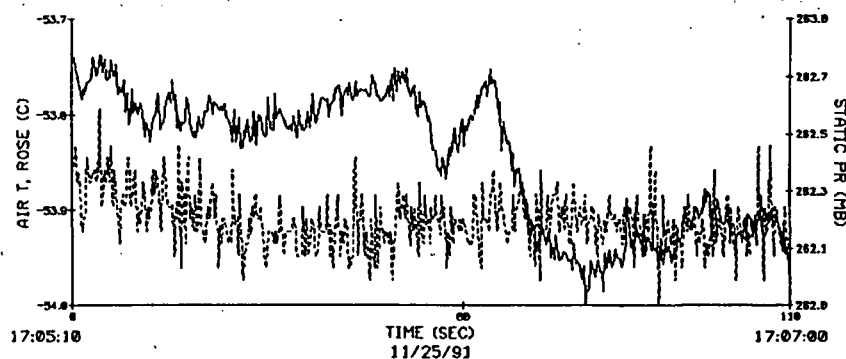
Wind Direction: 261.7 °

Wind Velocity: 44.92 m/sec

Pressure: 262.29 mb

Pressure Altitude: 10050.4 m

Aircraft Heading: 212.2 °



11/25/91 17:05:56.0754 17:05:57.6420 DeltaT: 0: 1.5666 TAS1 = 130.5 TAS2 = 130.6

1 mm

11/25/91

17:13:20-17:14:50

Leg # 19

Averages:

Temperature: -49.4 °C

Dew Point: -50.8 °C

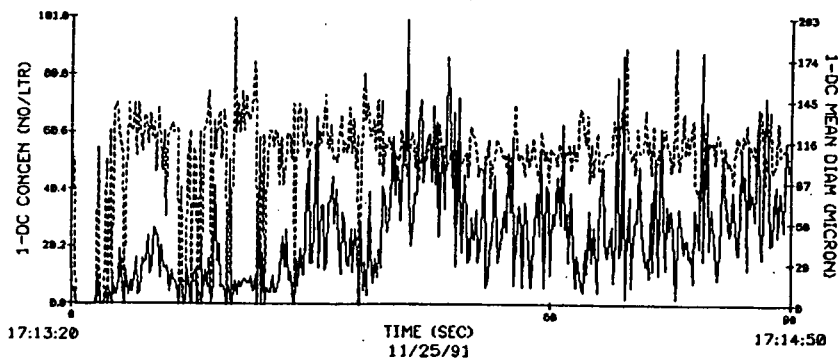
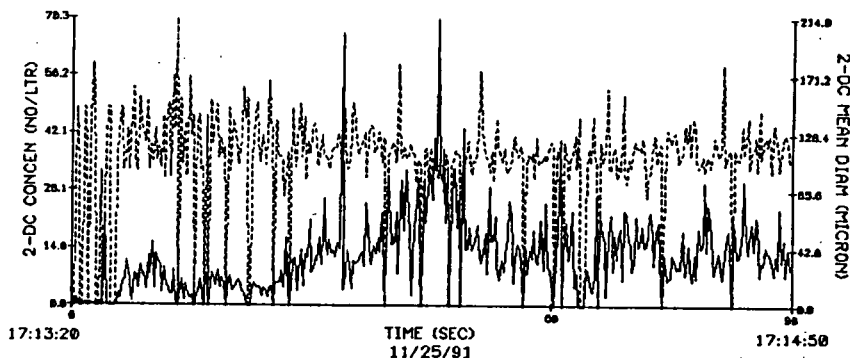
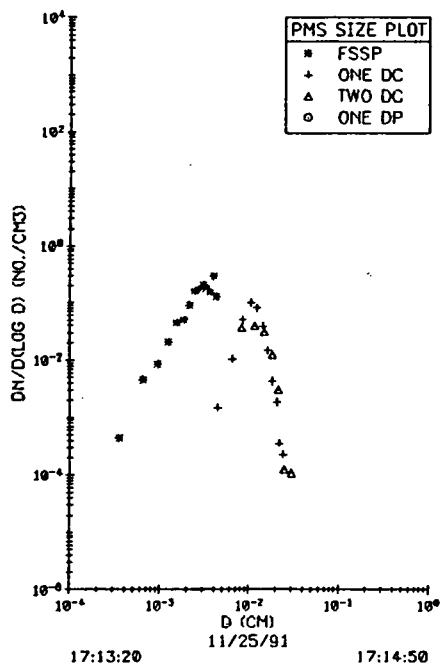
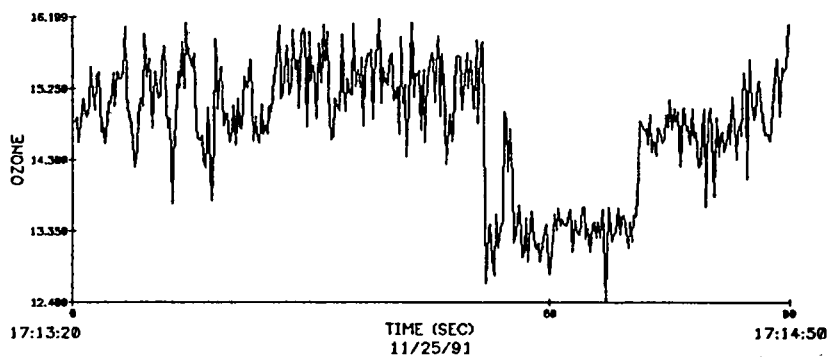
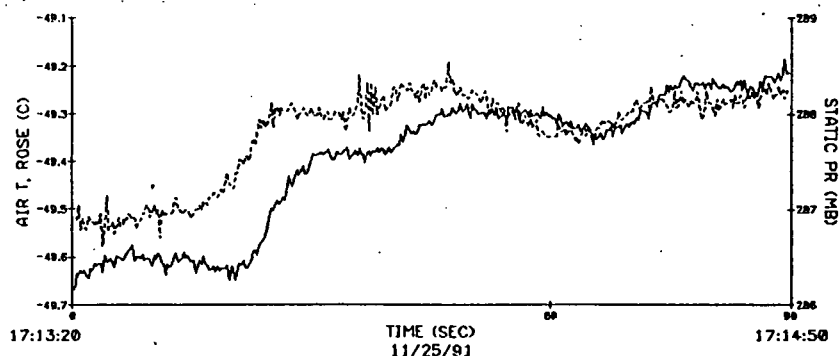
Wind Direction: 260.7 °

Wind Velocity: 38.04 m/sec

Pressure: 287.81 mb

Pressure Altitude: 9439.6 m

Aircraft Heading: 203.4 °



11/25/91 17:14:09.6561 17:14:10.6176 DeltaT: 0: 0.9615 TAS1 = 134.6 TAS2 = 134.6

1 mm

11/25/91

17:21:00-17:23:30

Leg # 20

Averages:

Temperature: -47.2 °C

Dew Point: -48.6 °C

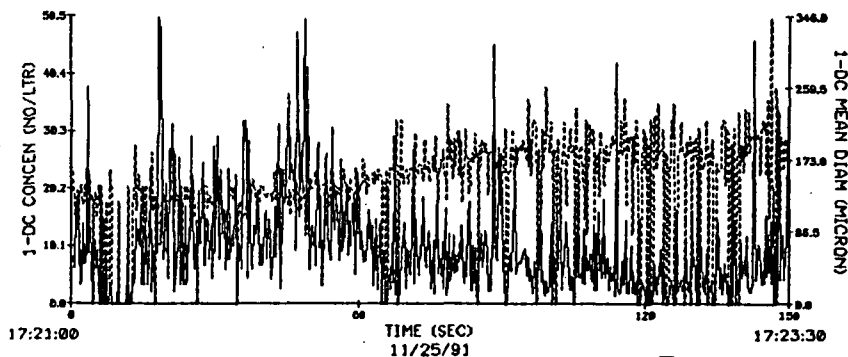
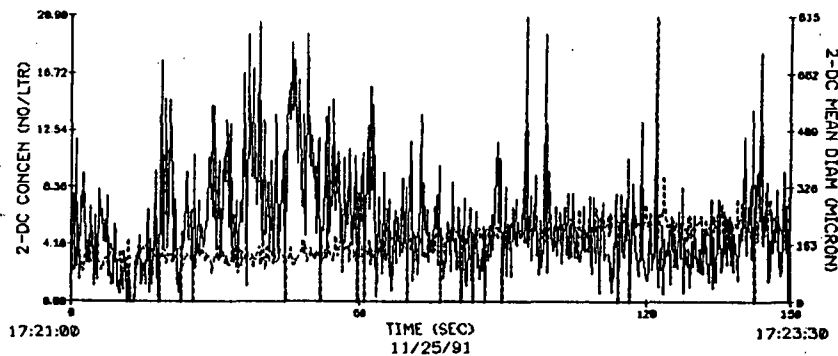
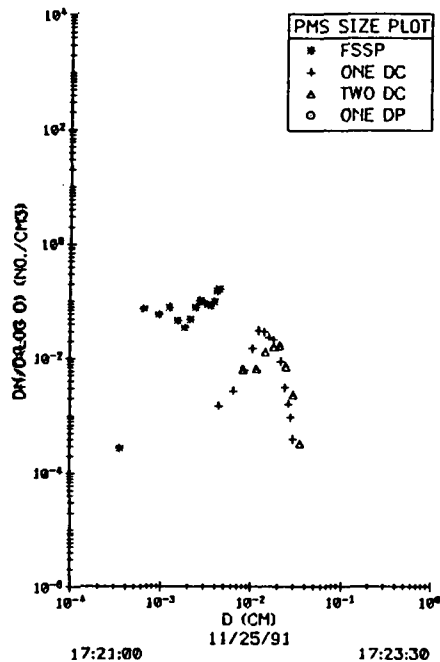
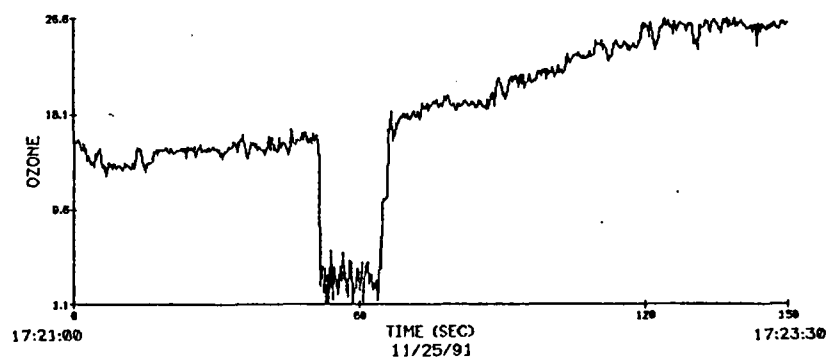
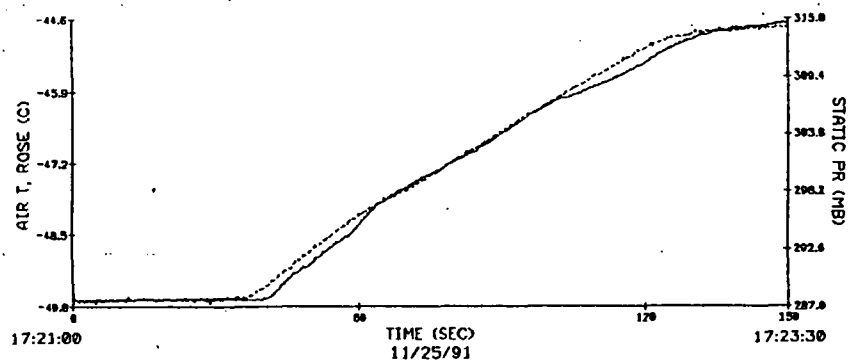
Wind Direction: 263.9 °

Wind Velocity: 36.51 m/sec

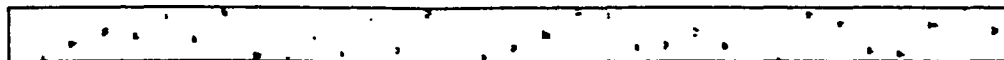
Pressure: 301.18 mb

Pressure Altitude: 9140.2 m

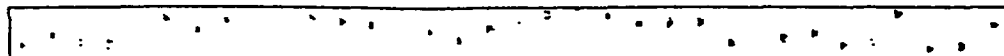
Aircraft Heading: 208.0 °



11/25/91 17:22:05.8283 17:22:07.9384 DeltaT: 0: 2.1101 TAS1 = 136.2 TAS2 = 135.2



1 mm



11/25/91

17:27:30-17:28:40

Leg # 21

Averages:

Temperature: -44.9 °C

Dew Point: -45.6 °C

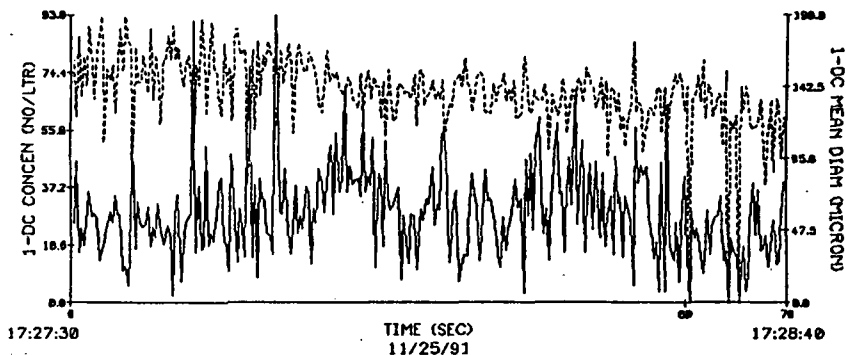
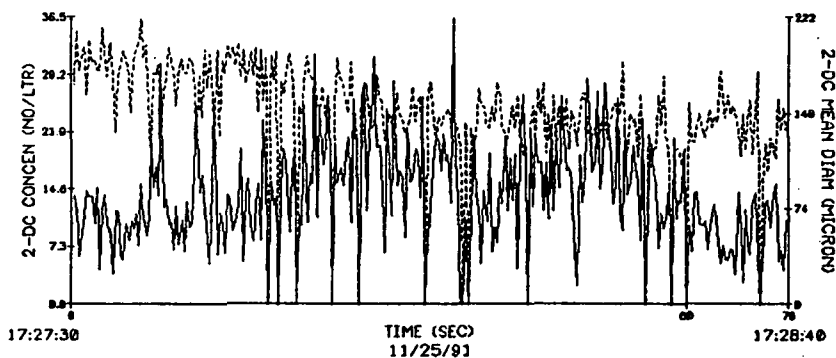
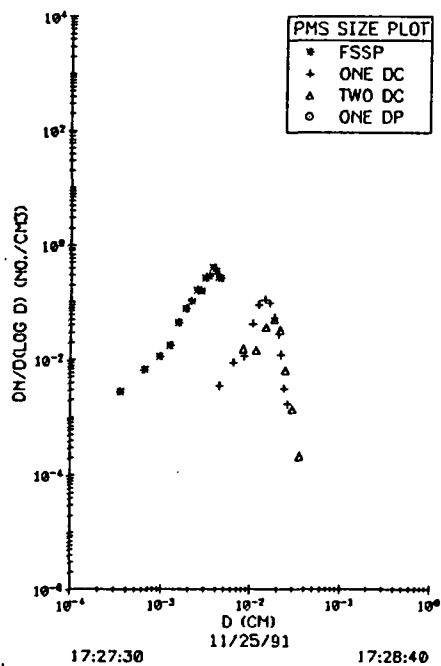
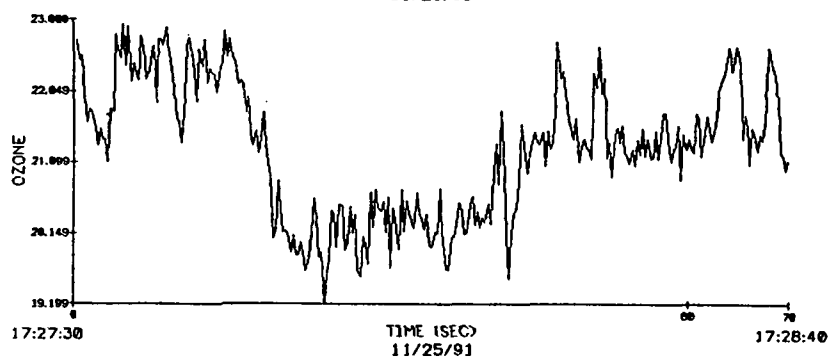
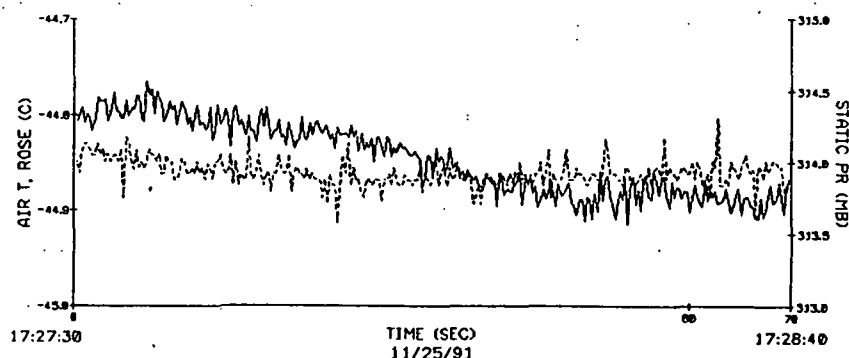
Wind Direction: 269.3 °

Wind Velocity: 35.73 m/sec

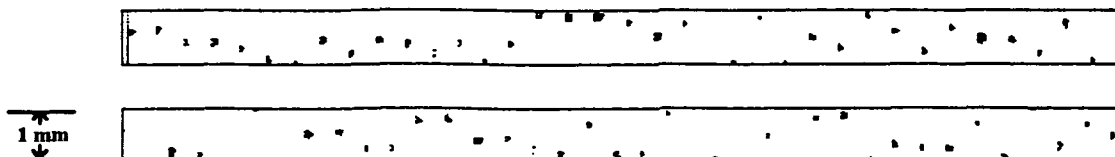
Pressure: 313.94 mb

Pressure Altitude: 8858.1 m

Aircraft Heading: 222.1 °



11/25/91 17:27:47.3221 17:27:48.1707 DeltaT: 0: 0.8486 TAS1 = 115.1 TAS2 = 115.1



11/25/91

17:30:30-17:33:00

Leg # 22

Averages:

Temperature: -39.8 °C

Dew Point: -40.0 °C

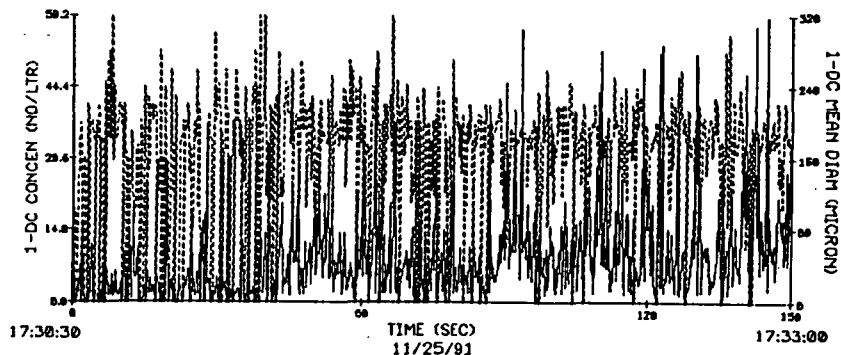
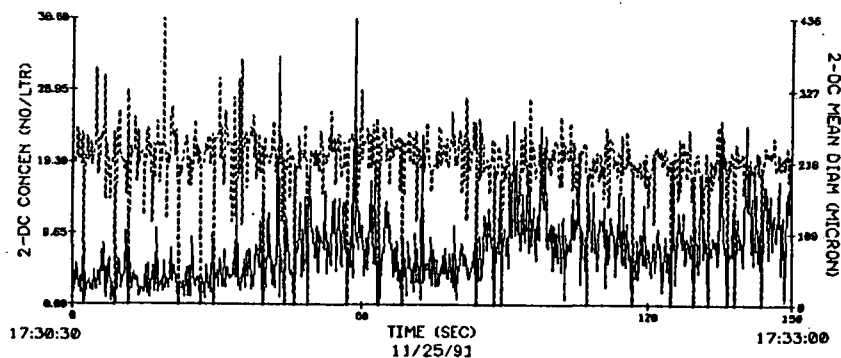
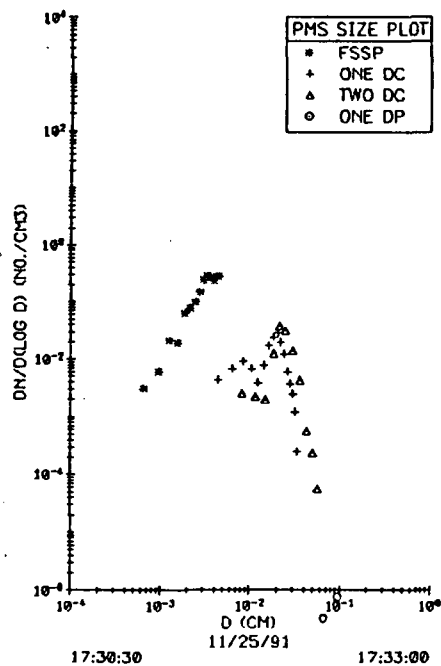
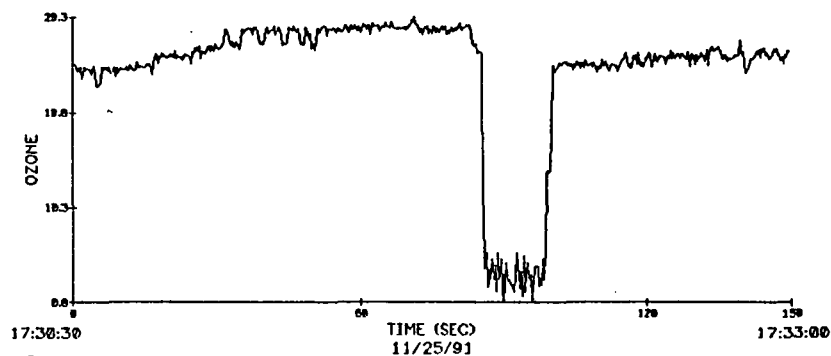
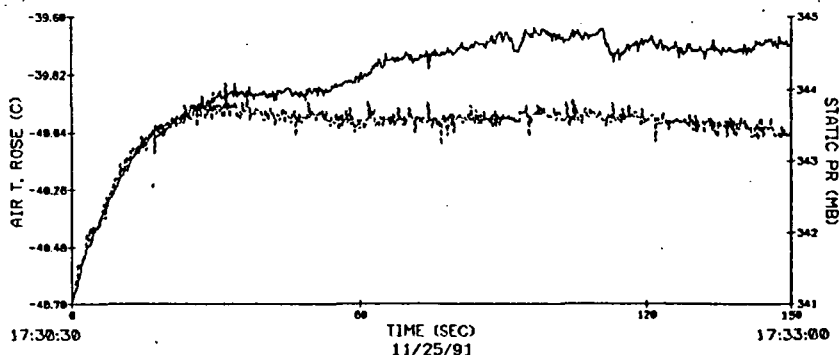
Wind Direction: 268.9 °

Wind Velocity: 31.63 m/sec

Pressure: 343.48 mb

Pressure Altitude: 8246.0 m

Aircraft Heading: 209.3 °



11/25/91

17:32:28.6411

17:32:29.9147

DeltaT: 0: 1.2736

TAS1 = 111.5

TAS2 = 111.5

1 mm

11/25/91

17:36:00-17:37:40

Leg # 23

Averages:

Temperature: -40.0 °C

Dew Point: -40.0 °C

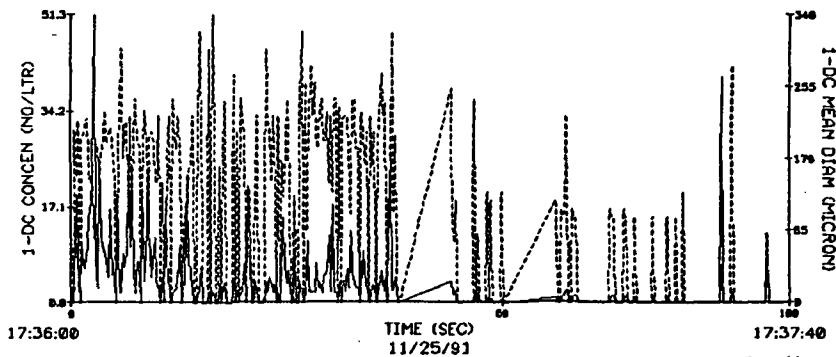
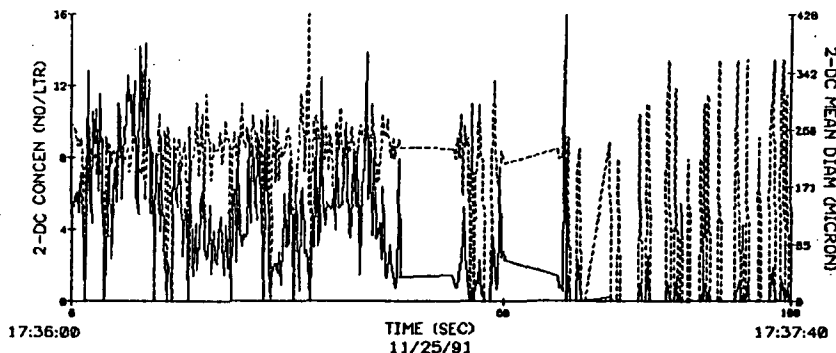
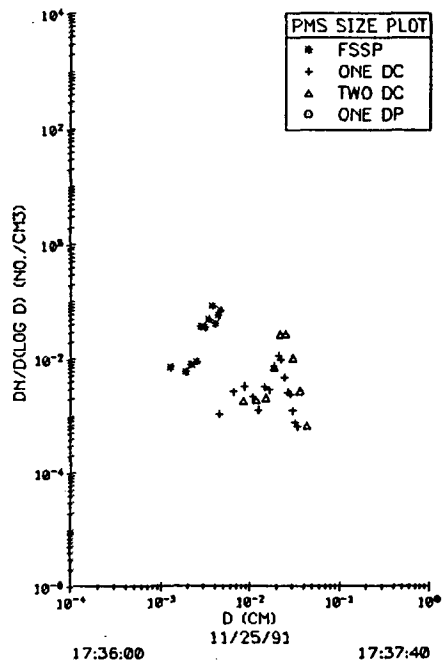
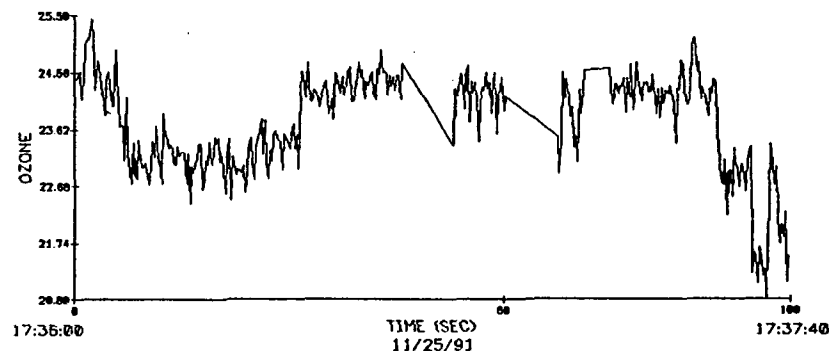
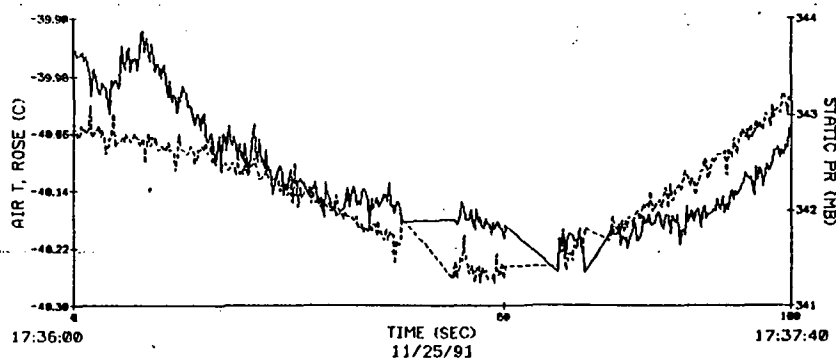
Wind Direction: 270.7 °

Wind Velocity: 31.93 m/sec

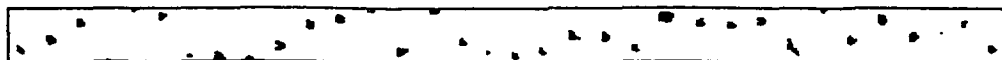
Pressure: 342.34 mb

Pressure Altitude: 8268.8 m

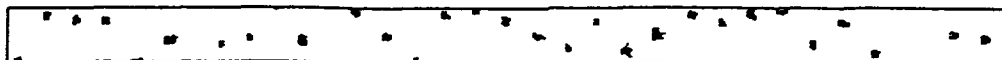
Aircraft Heading: 352.0 °



11/25/91 17:36:37.4793 17:36:39.0352 DeltaT: 0: 1.5557 TAS1 = 111.1 TAS2 = 111.1



1 mm



11/25/91

17:40:00-17:41:00

Leg # 24a

Averages:

Temperature: -39.9 °C

Dew Point: -40.0 °C

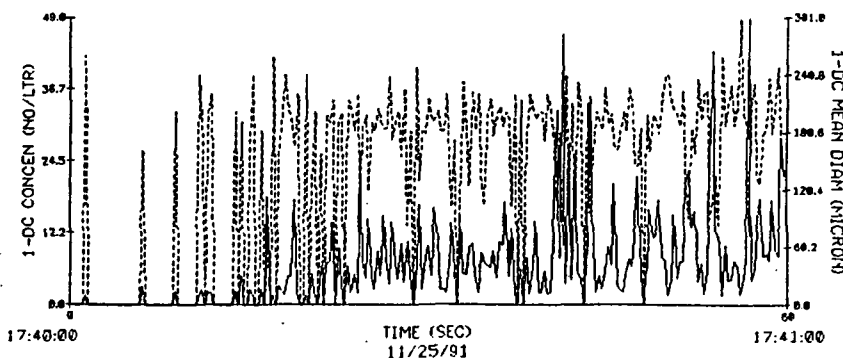
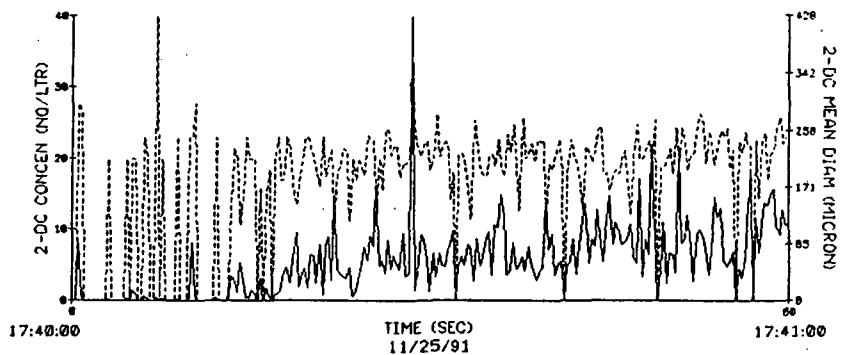
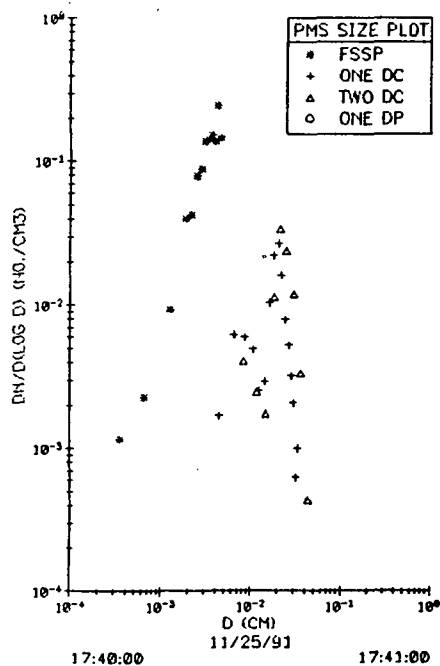
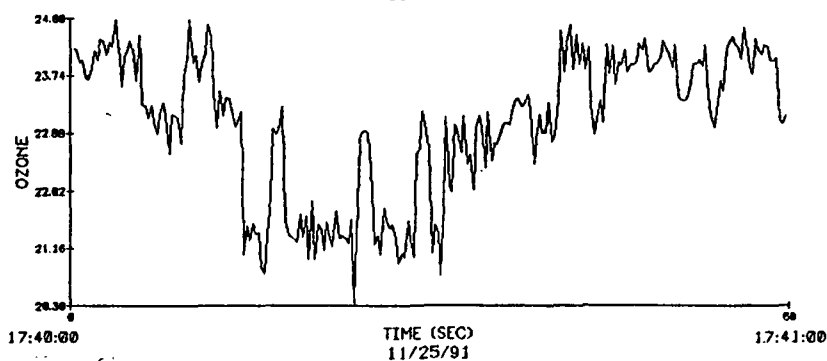
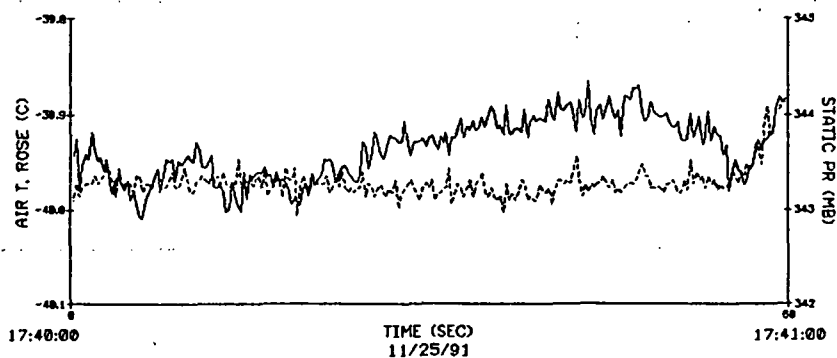
Wind Direction: 269.5 °

Wind Velocity: 32.44 m/sec

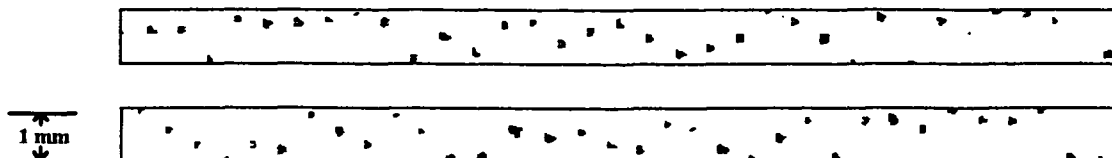
Pressure: 343.62 mb

Pressure Altitude: 8243.2 m

Aircraft Heading: 222.1 °



11/25/91 17:40:21.9459 17:40:24.6966 DeltaT: 0: 2.7507 TAS1 = 113.3 TAS2 = 113.2



11/25/91

17:42:00-17:43:05

Leg # 24b

Averages:

Temperature: -36.0 °C

Dew Point: -37.8 °C

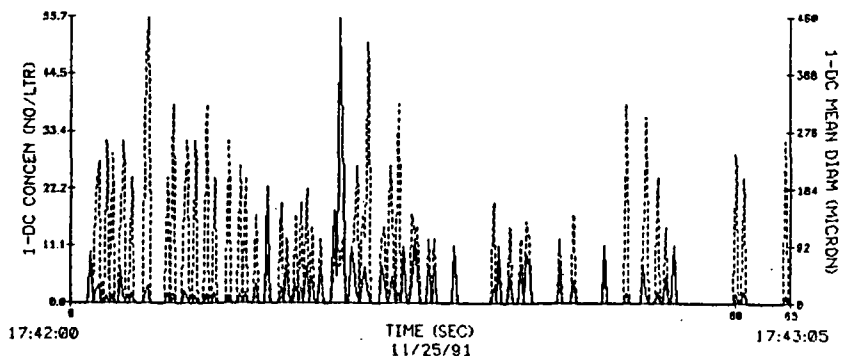
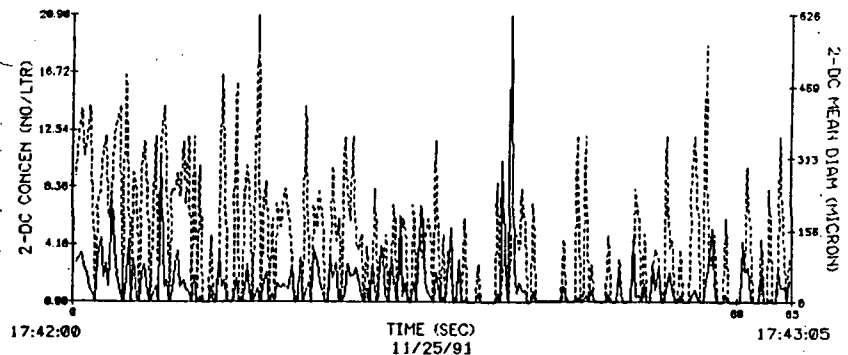
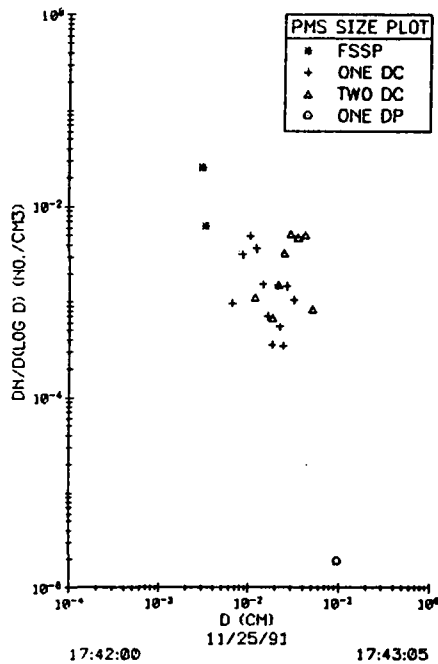
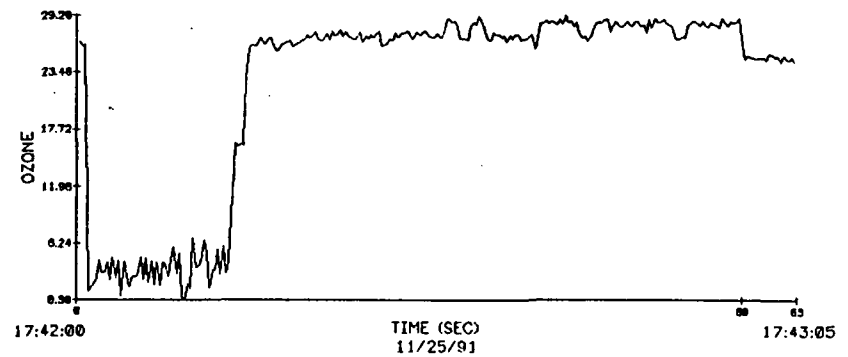
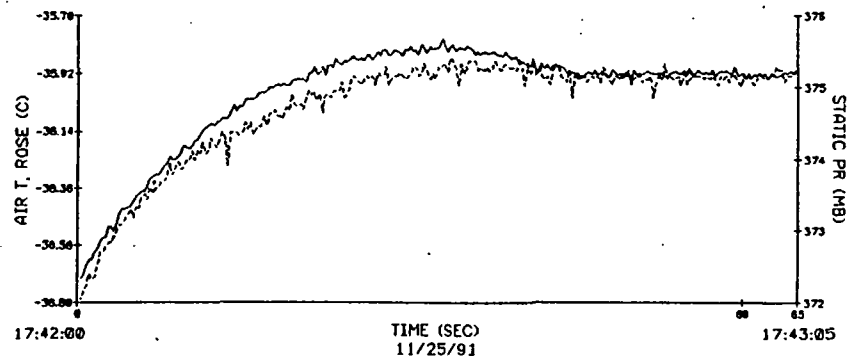
Wind Direction: 279.5 °

Wind Velocity: 25.49 m/sec

Pressure: 374.75 mb

Pressure Altitude: 7642.9 m

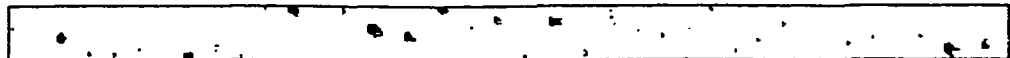
Aircraft Heading: 218.4 °



11/25/91 17:42:17.5790 17:42:26.2773 DeltaT: 0: 8.6983 TAS1 = 117.4 TAS2 = 113.3



1 mm



11/25/91

17:45:00-17:46:30

Leg # 25

Averages:

Temperature: -36.0 ° C

Dew Point: -37.9 ° C

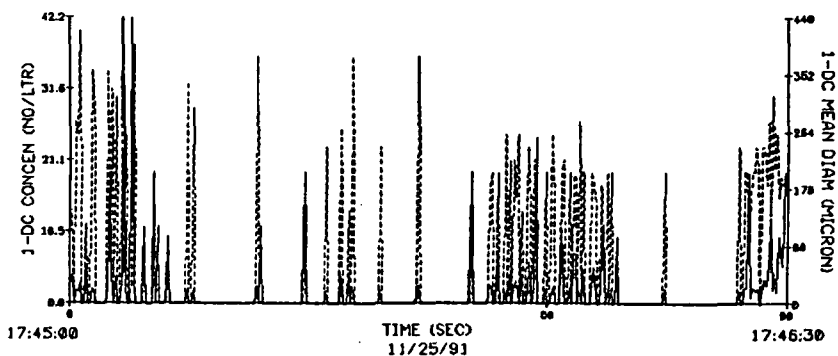
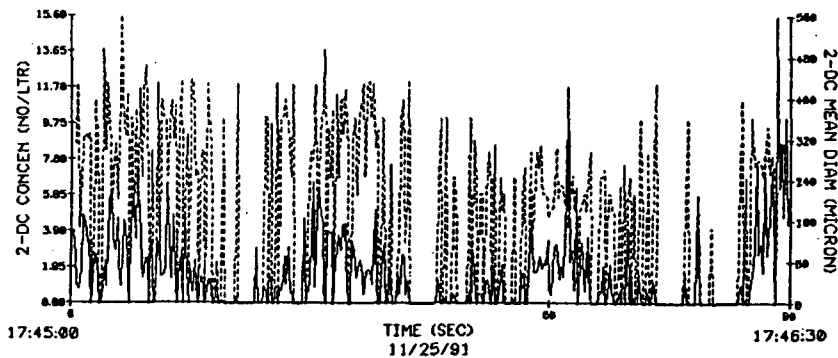
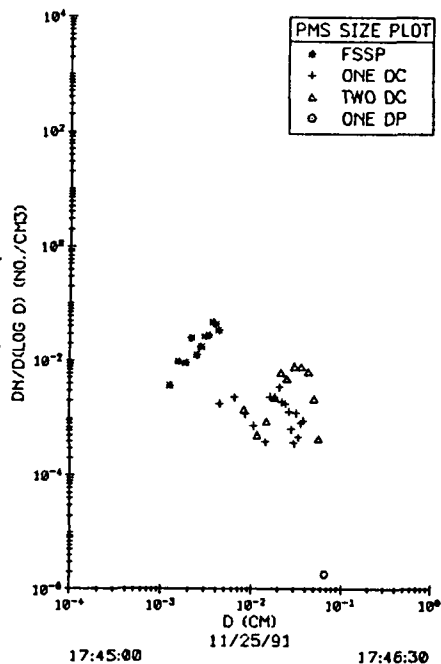
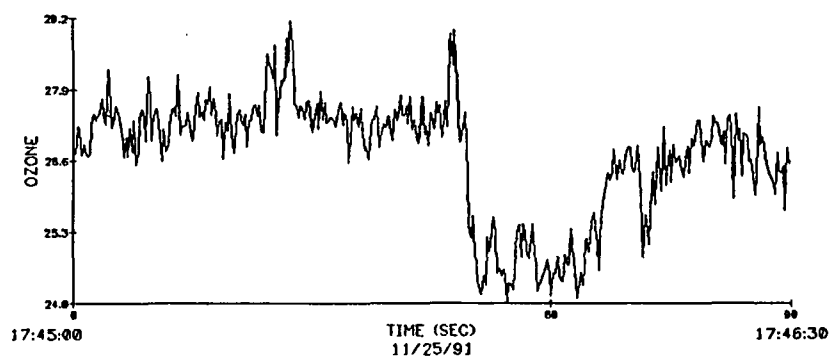
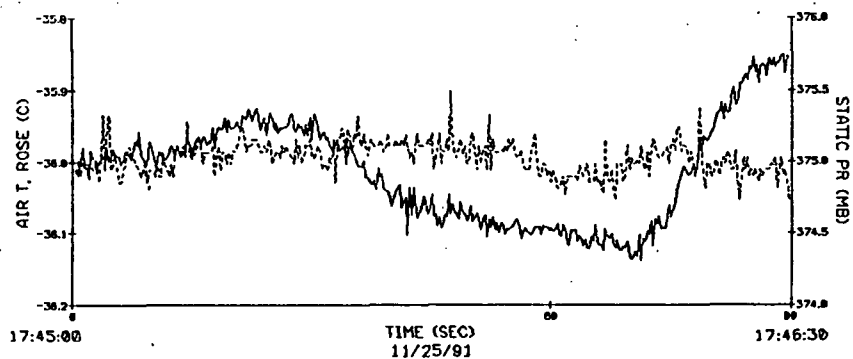
Wind Direction: 281.5 °

Wind Velocity: 25.91 m/sec

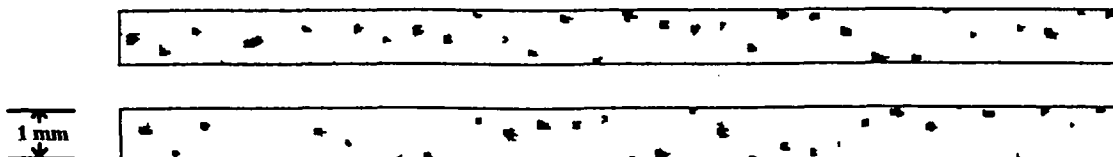
Pressure: 375.02 mb

Pressure Altitude: 7637.8 m

Aircraft Heading: 349.3 °



11/25/91 17:46:28.3442 17:46:29.6888 DeltaT: 0: 1.3446 TAS1 = 108.8 TAS2 = 108.8



11/25/91

17:47:10-17:49:15

Leg # 26a

Averages:

Temperature: -33.3 °C

Dew Point: -34.9 °C

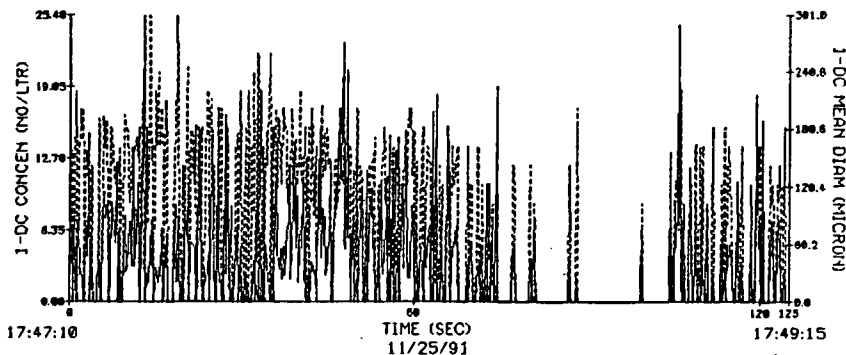
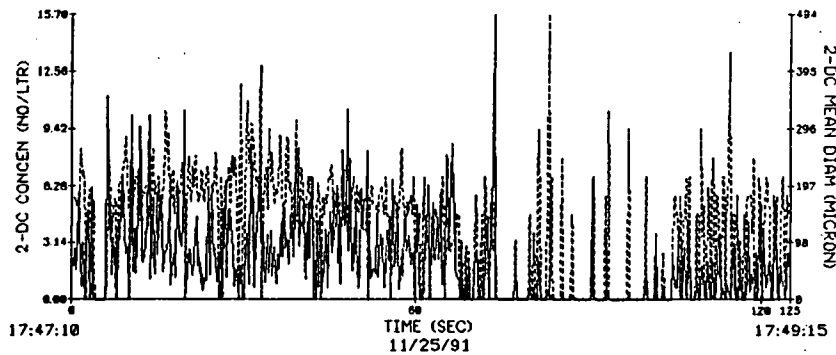
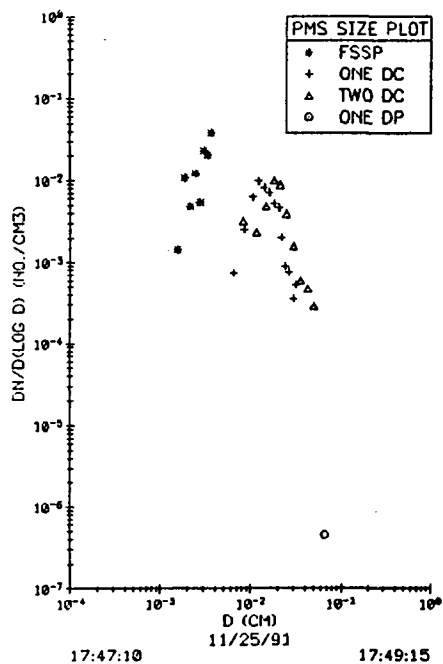
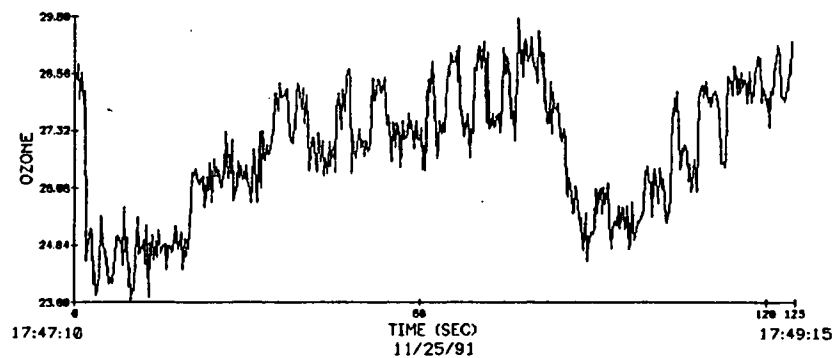
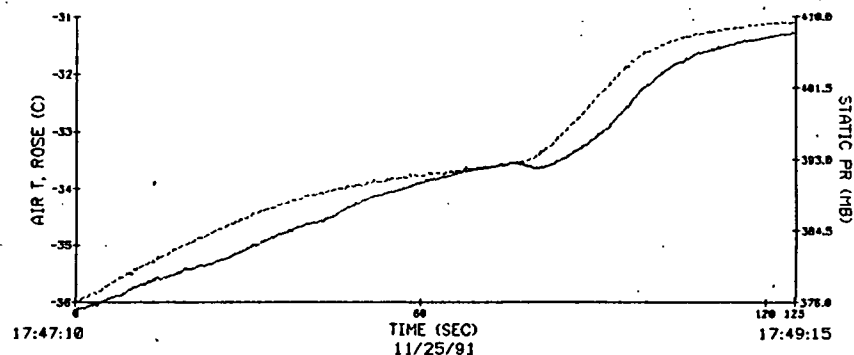
Wind Direction: 284.3 °

Wind Velocity: 24.68 m/sec

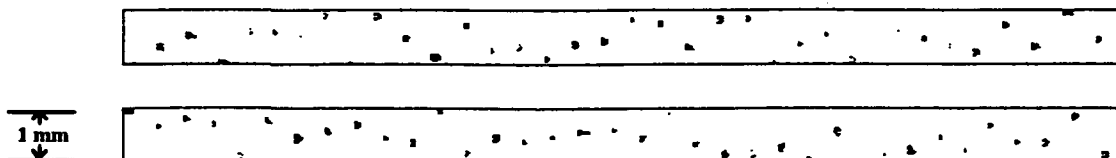
Pressure: 394.71 mb

Pressure Altitude: 7281.0 m

Aircraft Heading: 150.0 °



11/25/91 17:47:21.1005 17:47:23.4401 DeltaT: 0: 2.3396 TAS1 = 114.9 TAS2 = 115.7



11/25/91

17:49:20-17:51:30

Leg # 26b

Averages:

Temperature: -31.3 °C

Dew Point: -31.9 °C

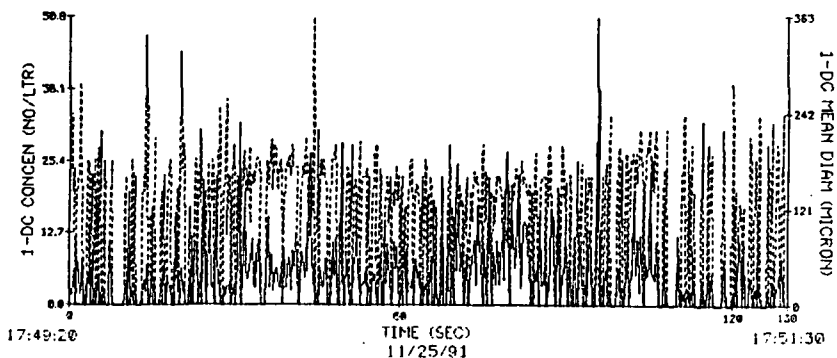
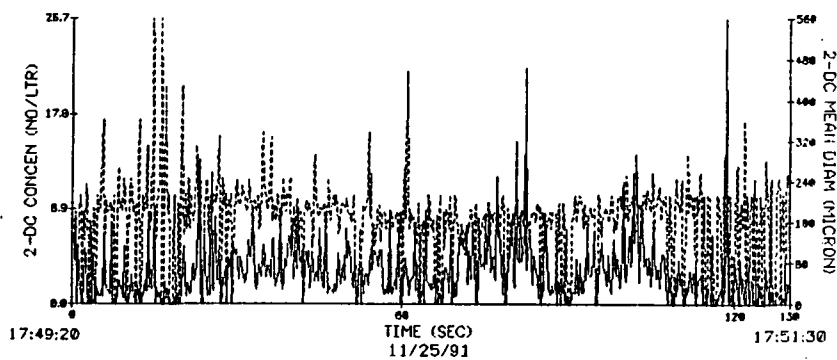
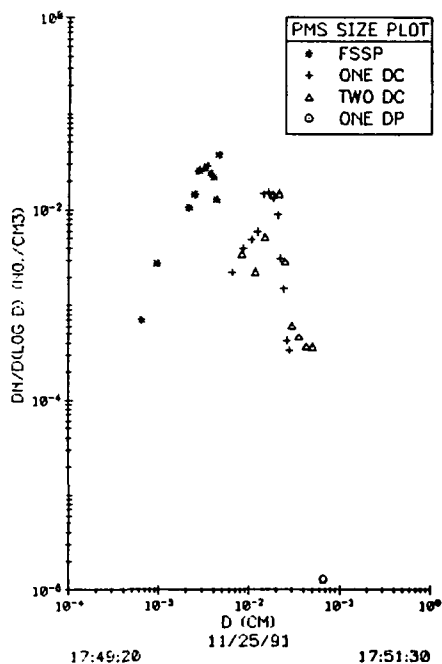
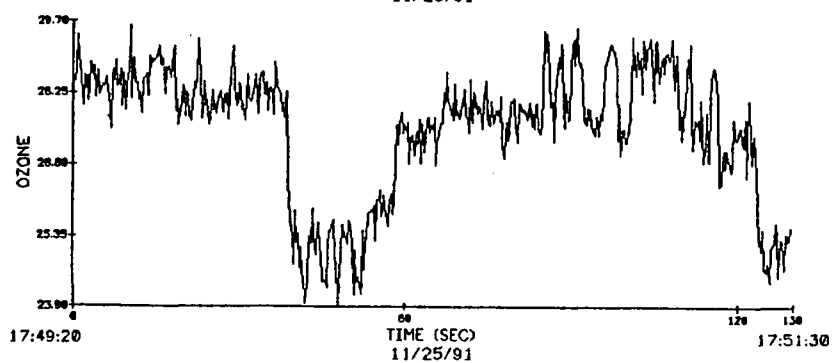
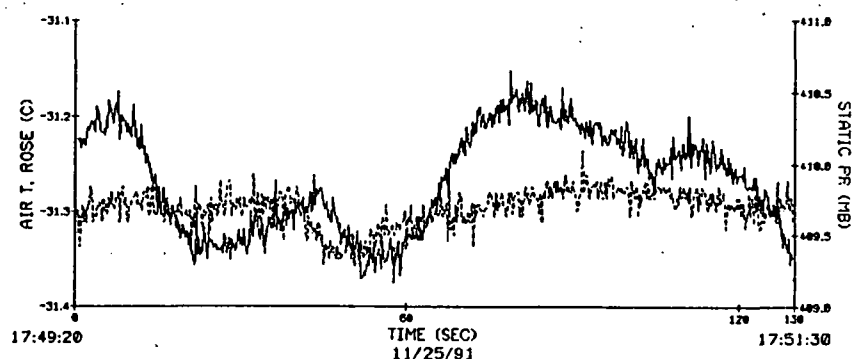
Wind Direction: 283.7 °

Wind Velocity: 23.95 m/sec

Pressure: 409.70 mb

Pressure Altitude: 7015.3 m

Aircraft Heading: 212.5 °



11/25/91

17:49:58.0631

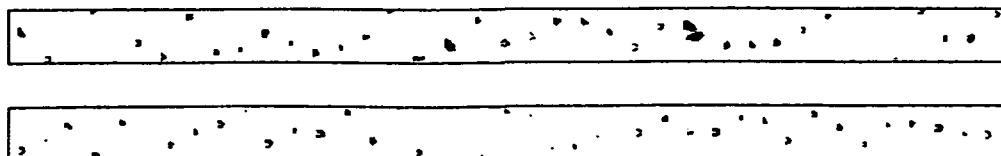
17:50:01.7230

DeltaT: 0: 3.6599

TAS1 = 101.7

TAS2 = 101.7

1 mm



11/25/91

17:52:50-17:57:00

Leg # 27

Averages:

Temperature: -31.3 °C

Dew Point: -31.7 °C

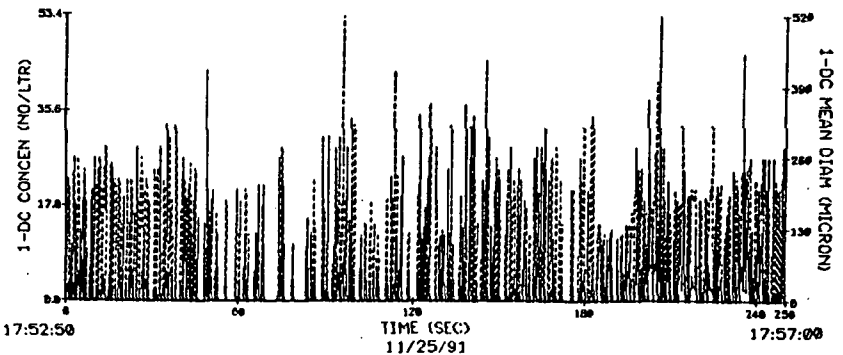
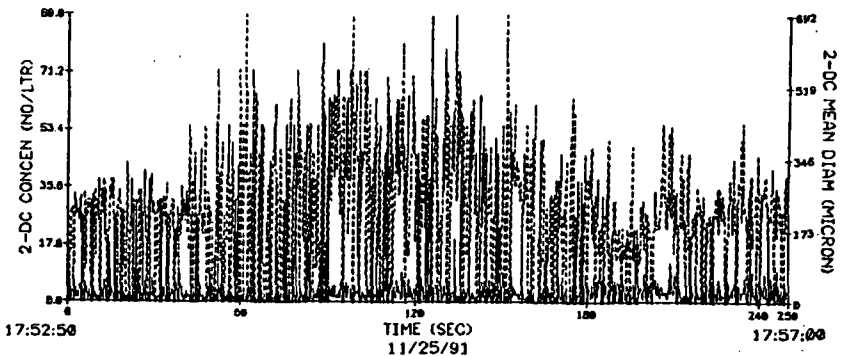
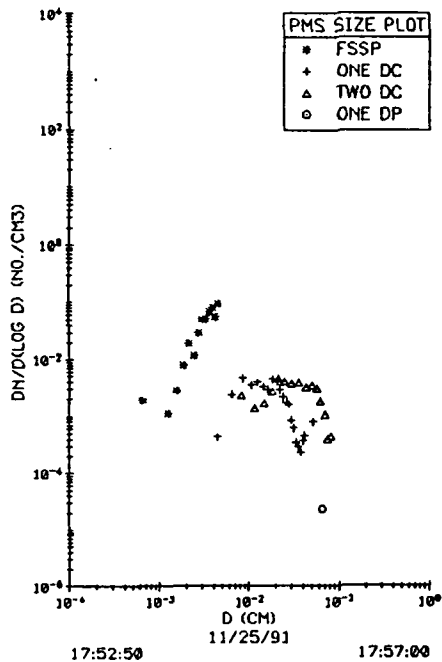
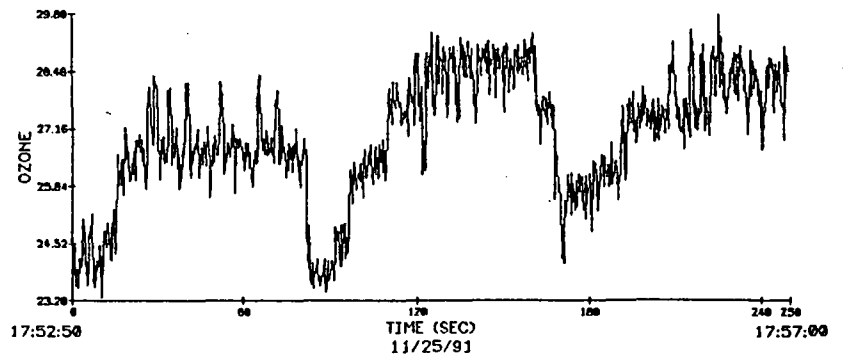
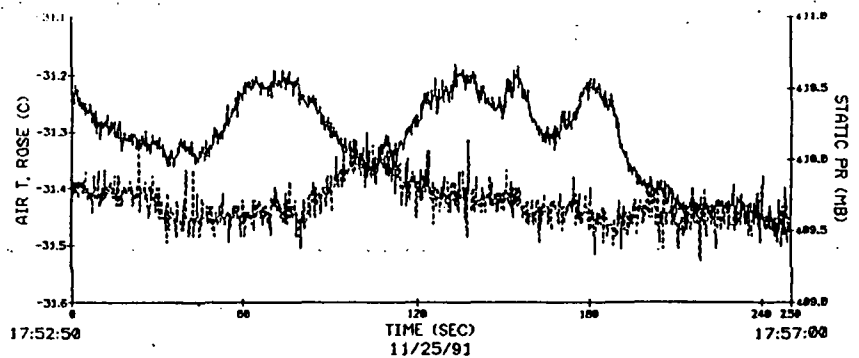
Wind Direction: 285.3 °

Wind Velocity: 24.87 m/sec

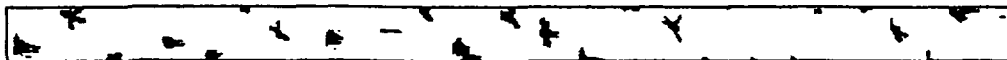
Pressure: 409.69 mb

Pressure Altitude: 7015.5 m

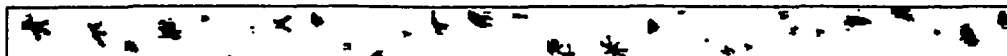
Aircraft Heading: 263.0 °



11/25/91 17:54:27.3819 17:54:30.7037 DeltaT: 0: 3.3218 TAS1 = 99.4 TAS2 = 99.4



1 mm



11/25/91

17:57:10-17:59:12

Leg # 28

Averages:

Temperature: °C

Dew Point: °C

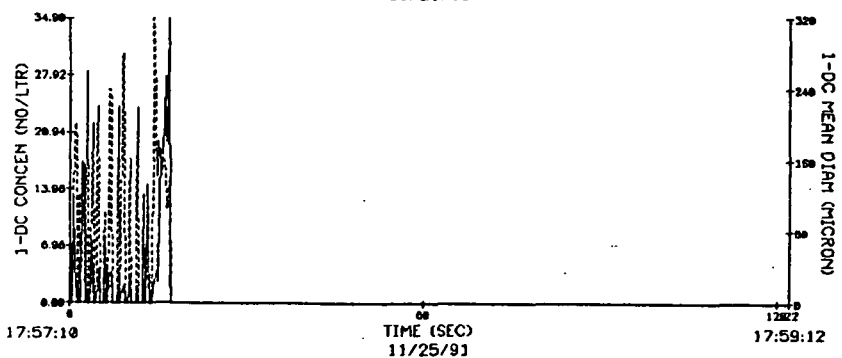
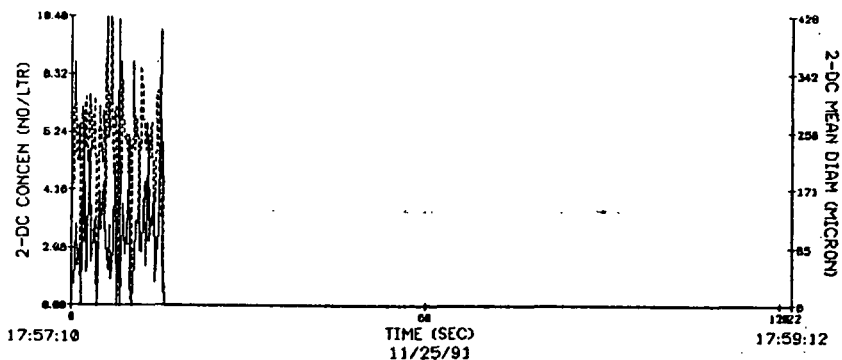
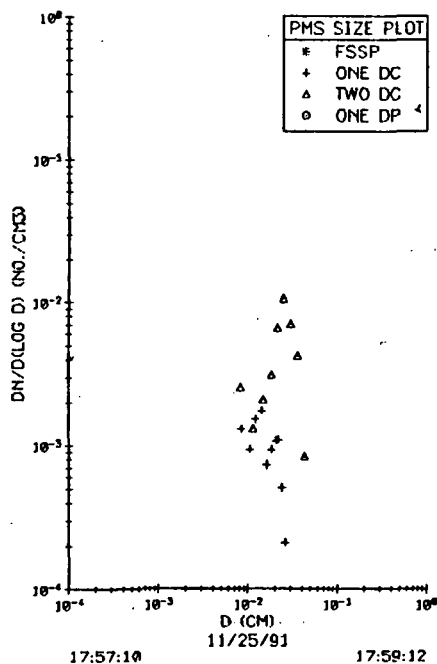
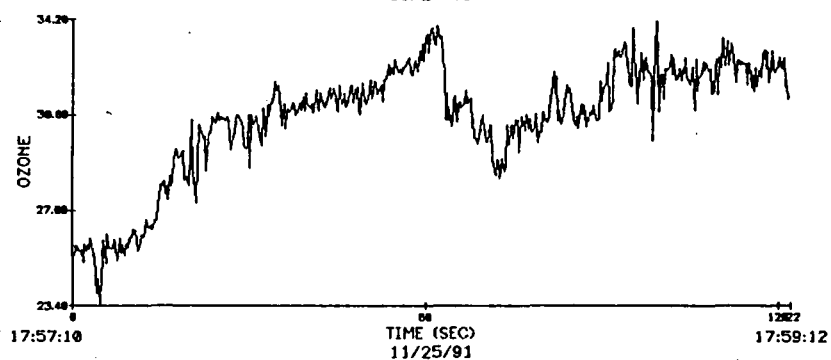
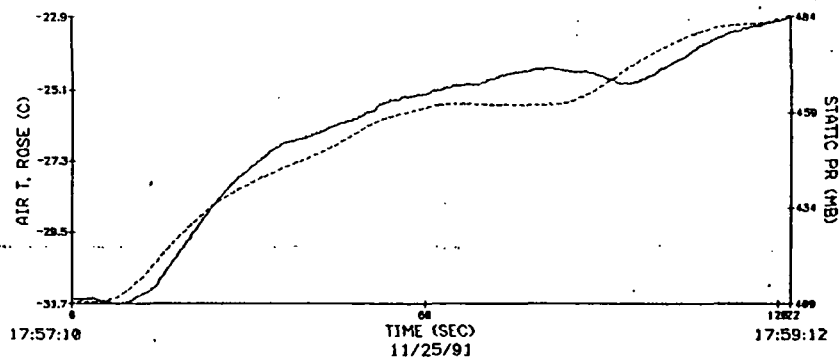
Wind Direction: °

Wind Velocity: m/sec

Pressure: mb

Pressure Altitude: m

Aircraft Heading: °



11/25/91

17:57:22.8197

17:57:25.4264

DeltaT:

0: 2.6067

TAS1 = 111.5

TAS2 = 113.9

1 mm

11/26/91

16:52:30-16:56:15

Leg # 1

Averages:

Temperature: -57.1 °C

Dew Point: Not Available

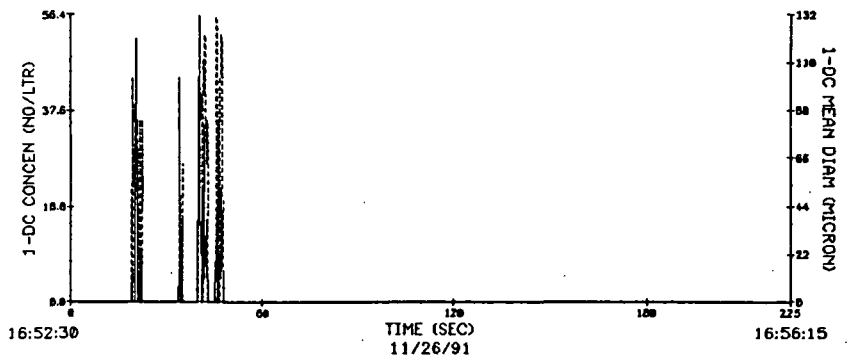
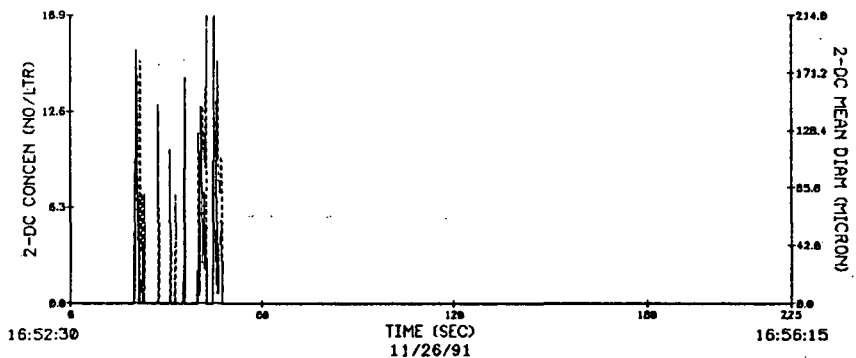
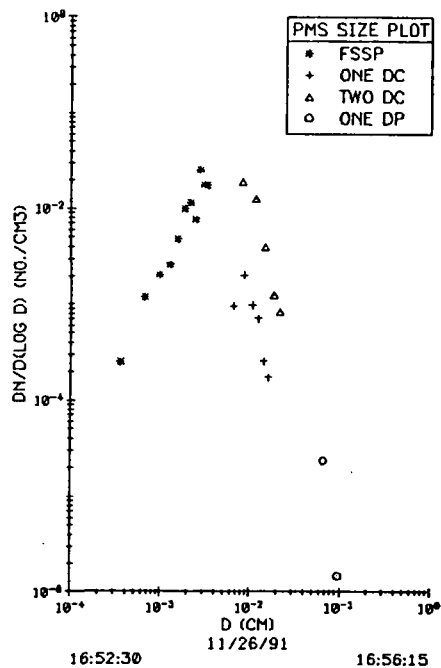
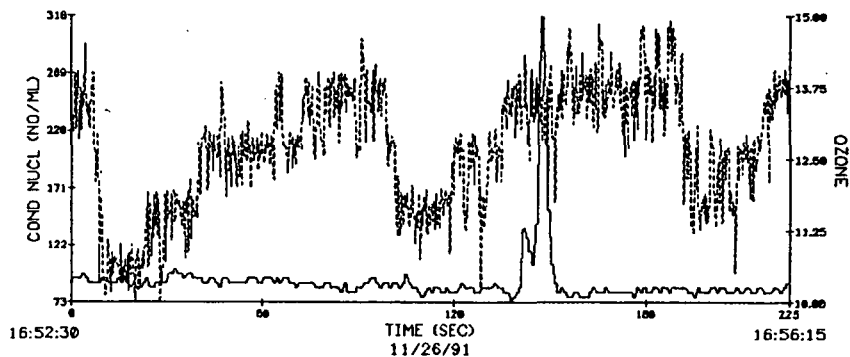
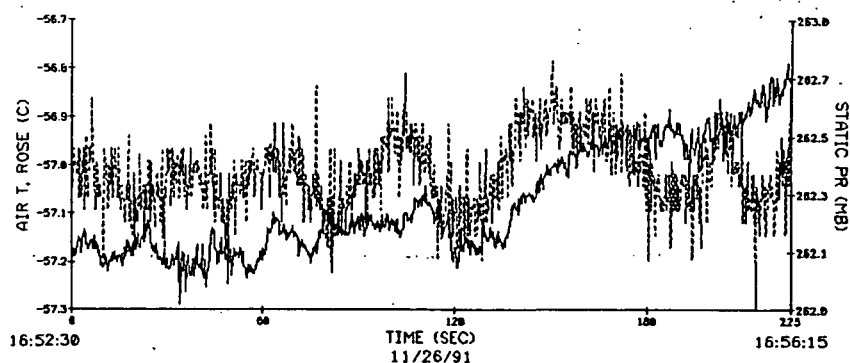
Wind Direction: 283.1 °

Wind Velocity: 16.19 m/sec

Pressure: 262.48 mb

Pressure Altitude: 10045.7 m

Aircraft Heading: 96.9 °



11/26/91 16:53:10.2746 16:53:13.2366 DeltaT: 0: 2.9620 TAS1 = 127.8 TAS2 = 127.6

1 mm

11/26/91

16:59:40-17:05:20

Leg # 2

Averages:

Temperature: -57.1 °C

Dew Point: Not Available

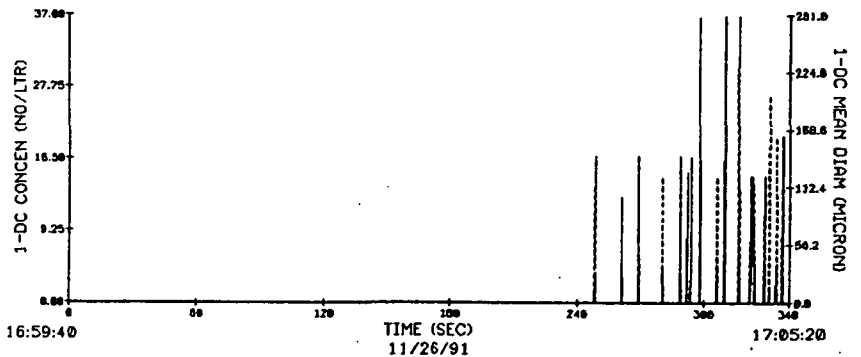
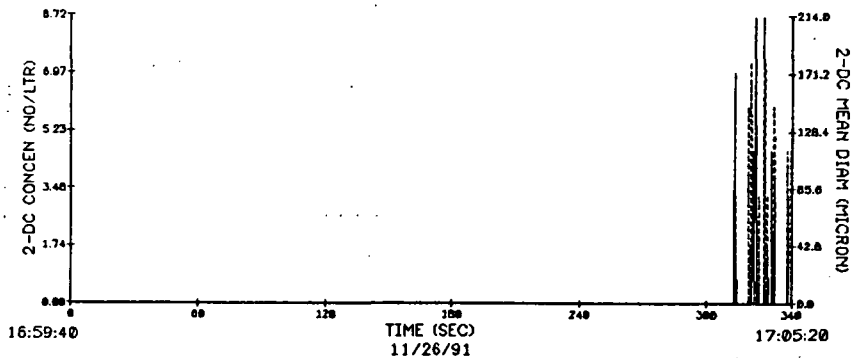
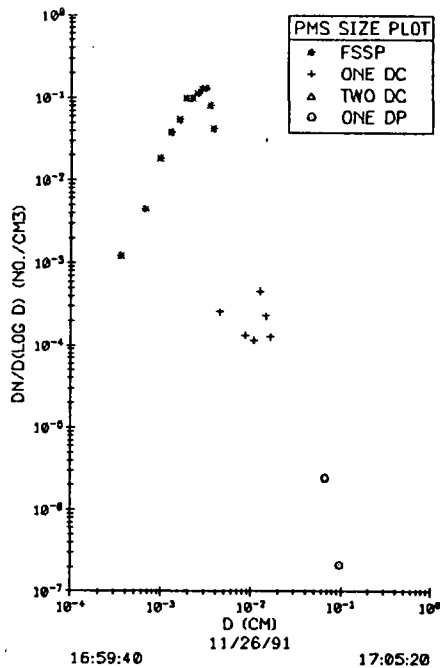
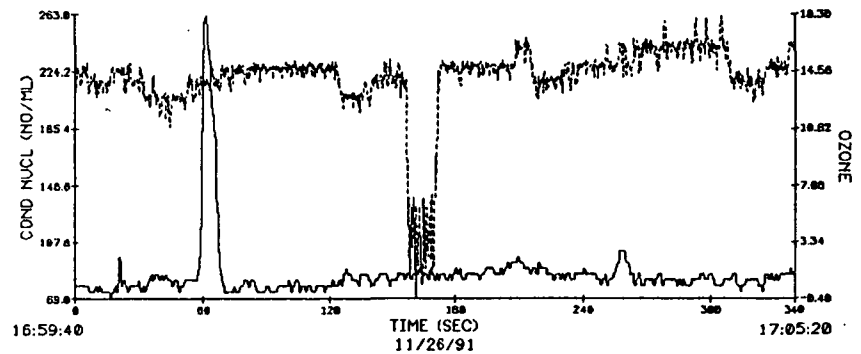
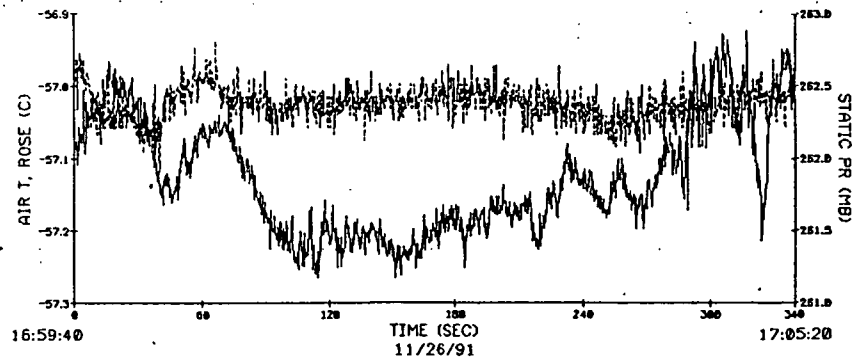
Wind Direction: 280.8 °

Wind Velocity: 17.73 m/sec

Pressure: 262.39 mb

Pressure Altitude: 10048.1 m

Aircraft Heading: 278.2 °



11/26/91 17:04:53.0832 17:05:03.1800 DeltaT: 0:10.0968 TAS1 = 123.1 TAS2 = 122.3

1 mm

11/26/91

17:10:22-17:14:25

Leg # 3

Averages:

Temperature: -54.3 °C

Dew Point: Not Available

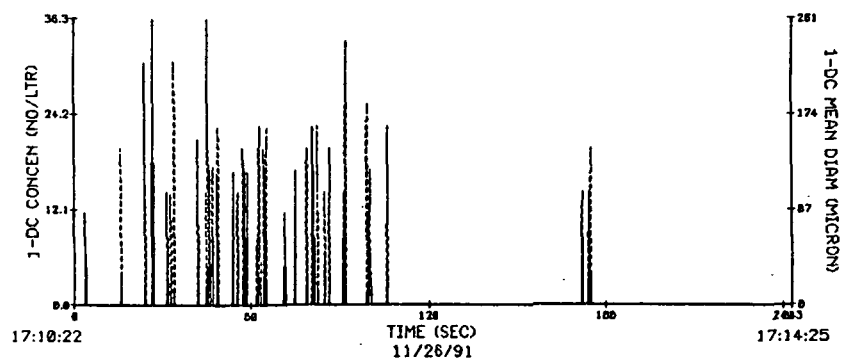
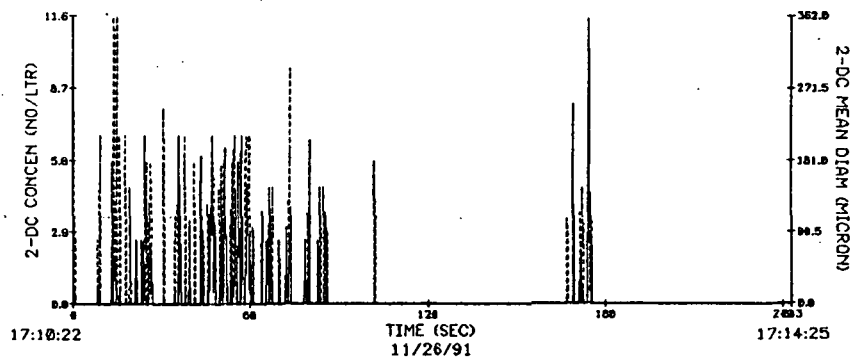
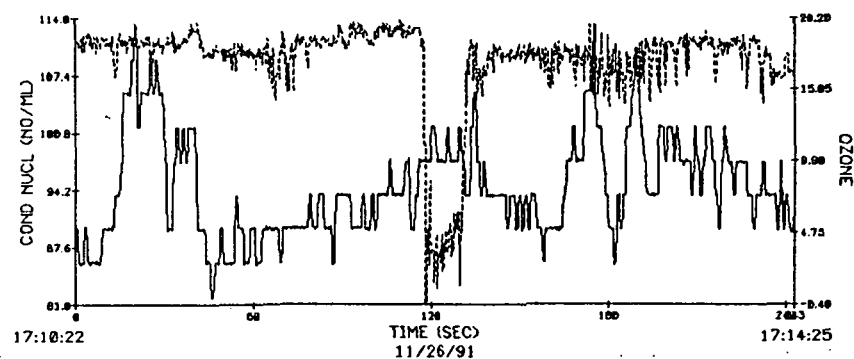
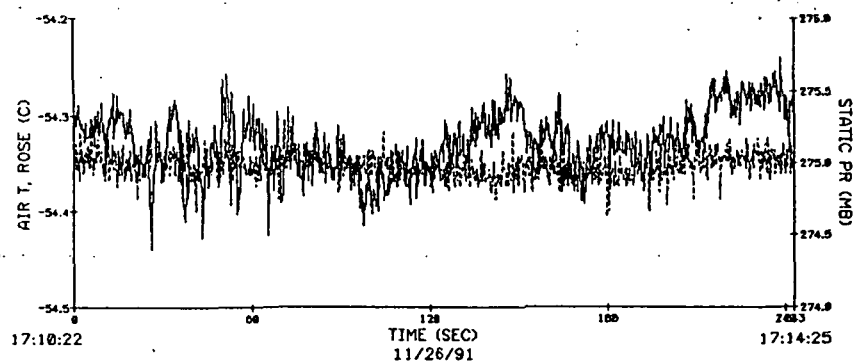
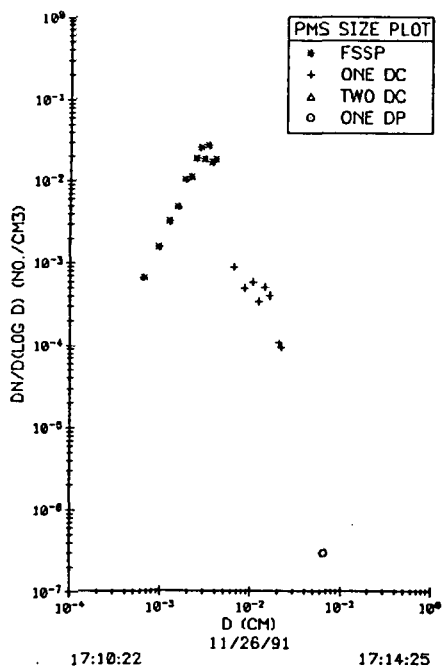
Wind Direction: 280.1 °

Wind Velocity: 15.44 m/sec

Pressure: 274.99 mb

Pressure Altitude: 9740.7 m

Aircraft Heading: 96.9 °



11/26/91 17:11:34.5445 17:13:09.1079 DeltaT: 1:34.5634 TAS1 = 123.3 TAS2 = 120.4

1 mm

11/26/91

17:18:10-17:24:10

Leg # 4

Averages:

Temperature: -51.5 °C

Dew Point: Not Available

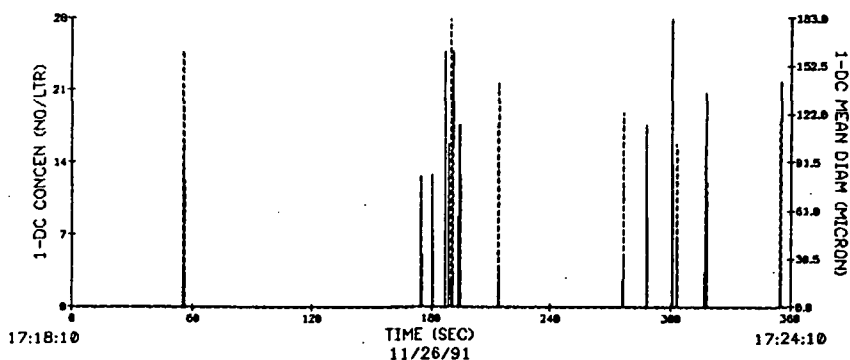
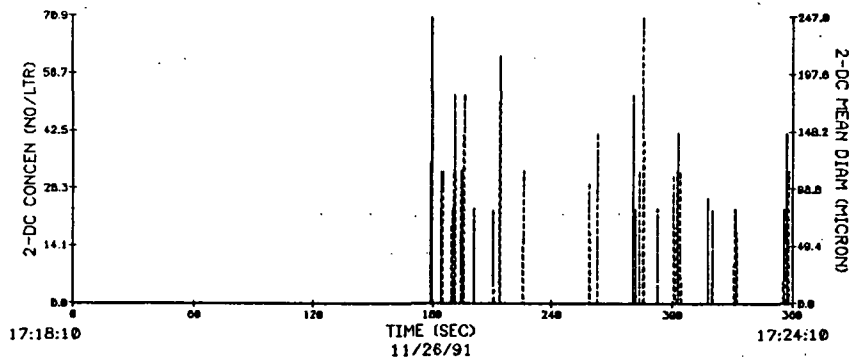
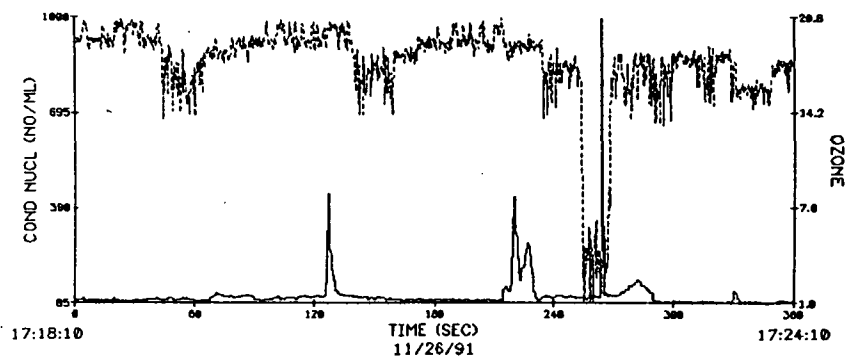
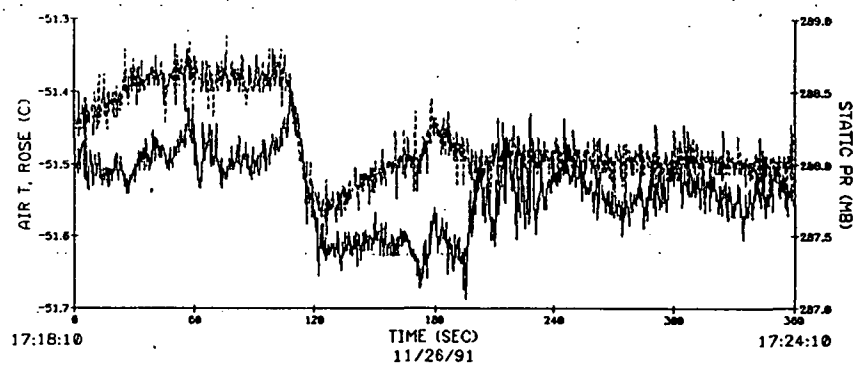
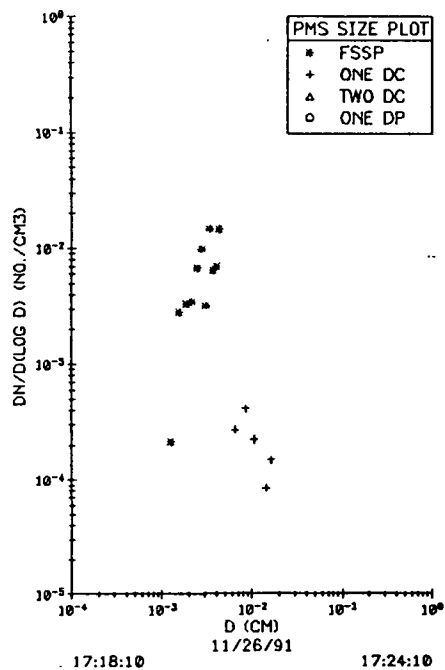
Wind Direction: 276.1 °

Wind Velocity: 16.04 m/sec

Pressure: 288.17 mb

Pressure Altitude: 9431.2 m

Aircraft Heading: 277.2 °



11/26/91

17: 21: 09. 7597

17: 22: 28. 4768

DeltaT:

1: 18. 7171

TAS1 = 118. 9

TAS2 = 117. 5

1 mm

11/26/91

17:29:21-17:32:45

Leg # 5

Averages:

Temperature: -49.0 °C

Dew Point: Not Available

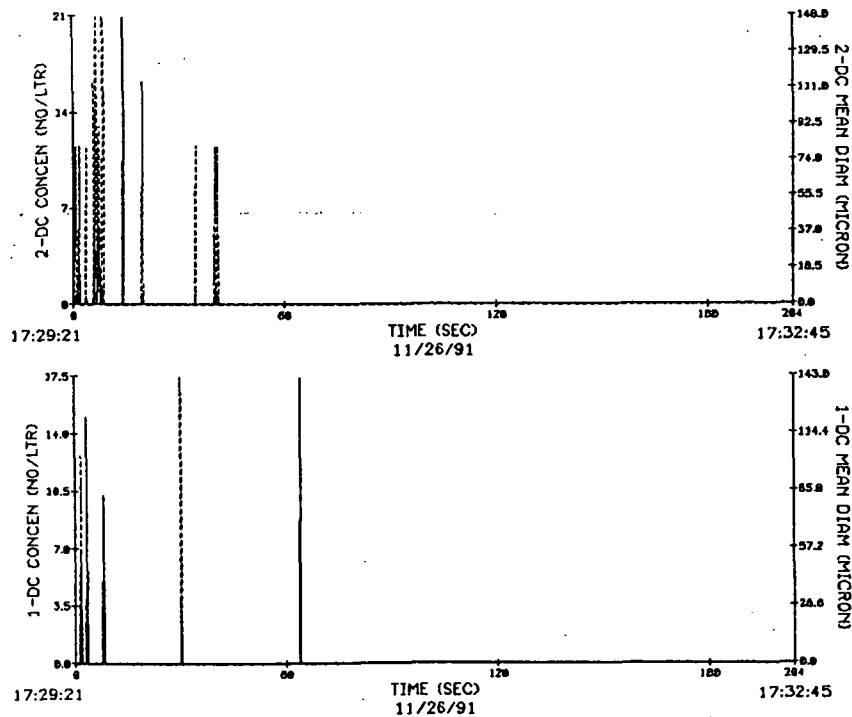
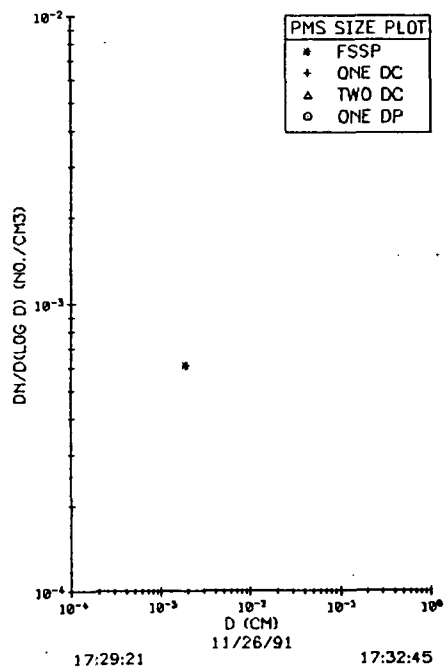
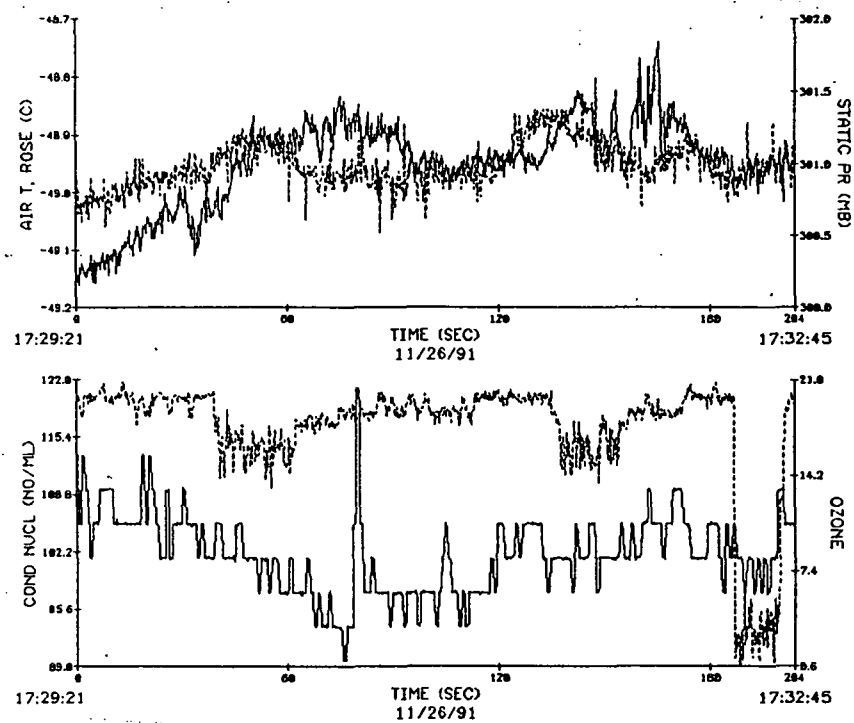
Wind Direction: 271.2 °

Wind Velocity: 14.38 m/sec

Pressure: 301.00 mb

Pressure Altitude: 9140.9 m

Aircraft Heading: 98.0 °



11/26/91 17:29:21.6578 17:30:02.8957 DeltaT: 0:41.2379 TAS1 = 119.8 TAS2 = 120.4

1 mm

11/26/91

17:36:30-17:41:32

Leg # 6

Averages:

Temperature: -46.3 °C

Dew Point: Not Available

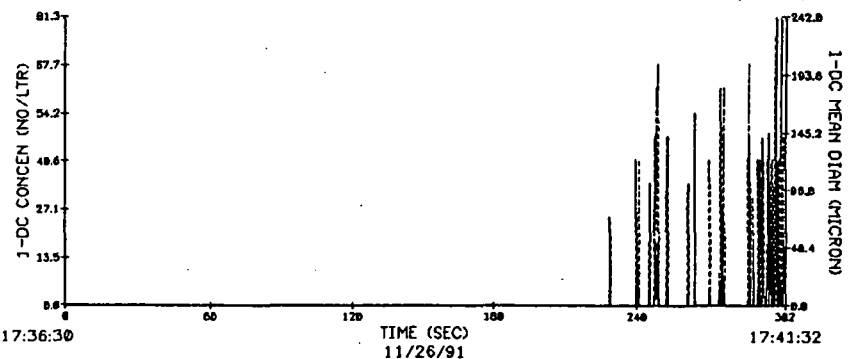
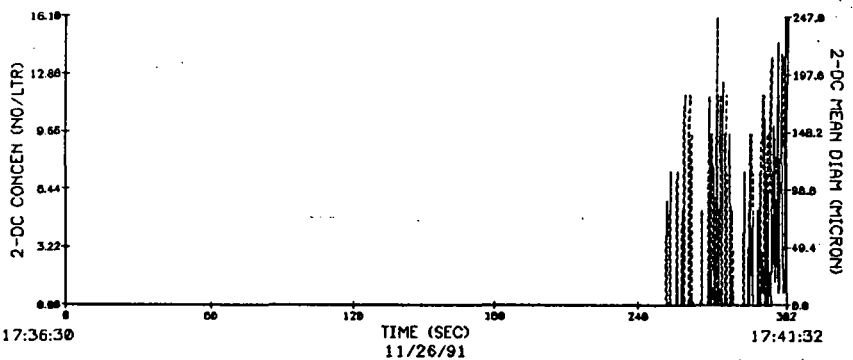
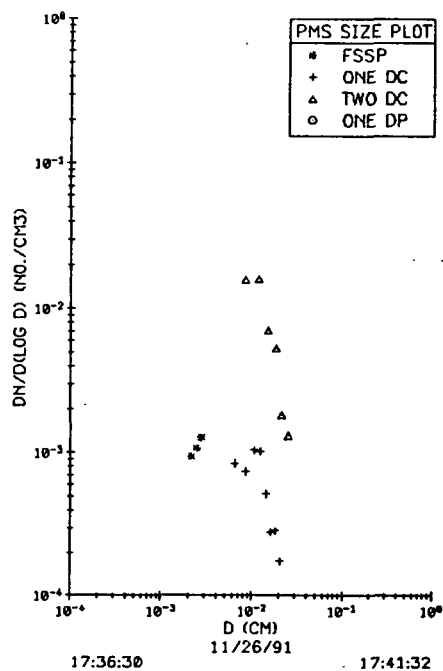
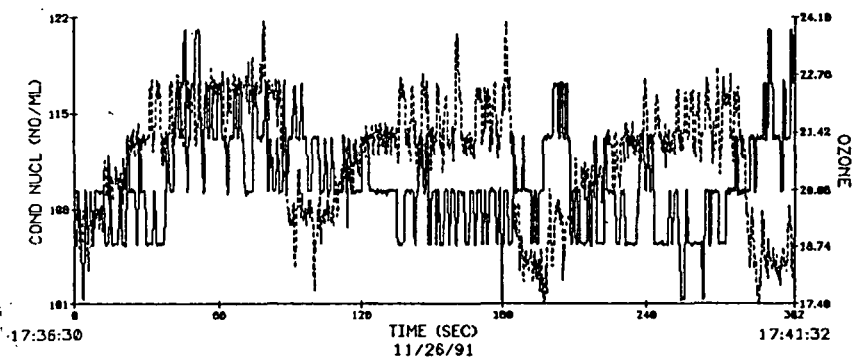
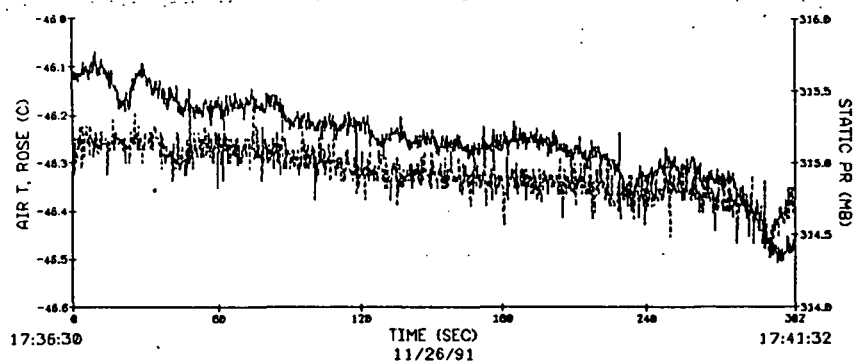
Wind Direction: 261.9 °

Wind Velocity: 16.02 m/sec

Pressure: 314.93 mb

Pressure Altitude: 8836.7 m

Aircraft Heading: 275.5 °



11/26/91 17:41:18.3927 17:41:26.3408 DeltaT: 0: 7.9481 TAS1 = 116.1 TAS2 = 116.3

1 mm

11/26/91

17:46:55-17:50:20

Leg # 7

Averages:

Temperature: -46.2 °C

Dew Point: Not Available

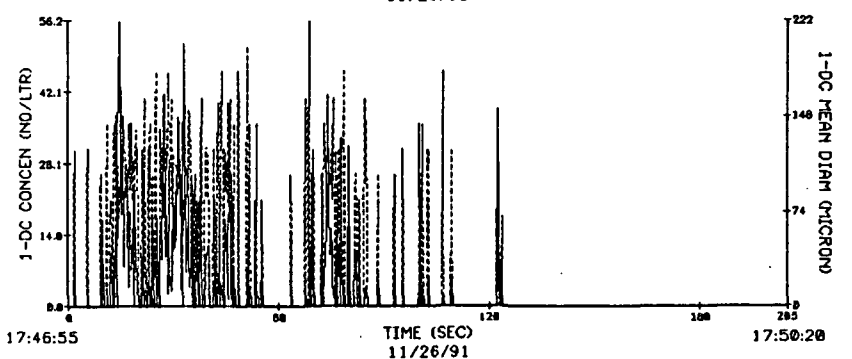
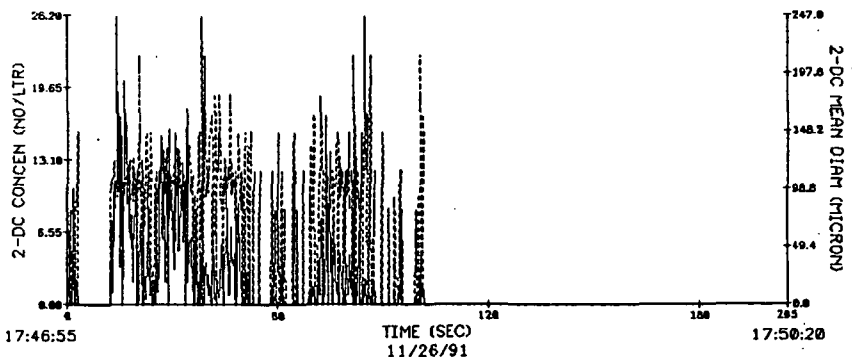
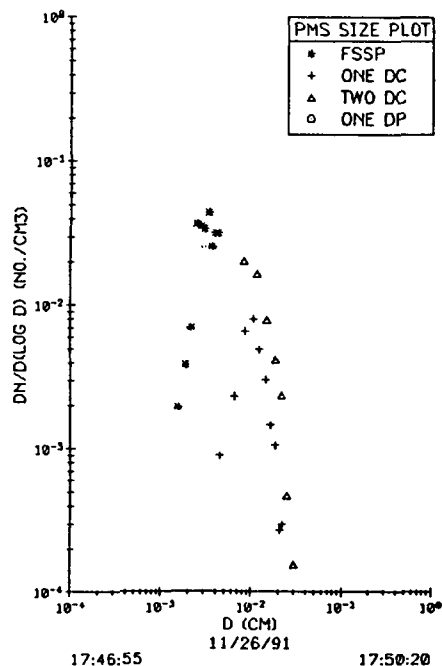
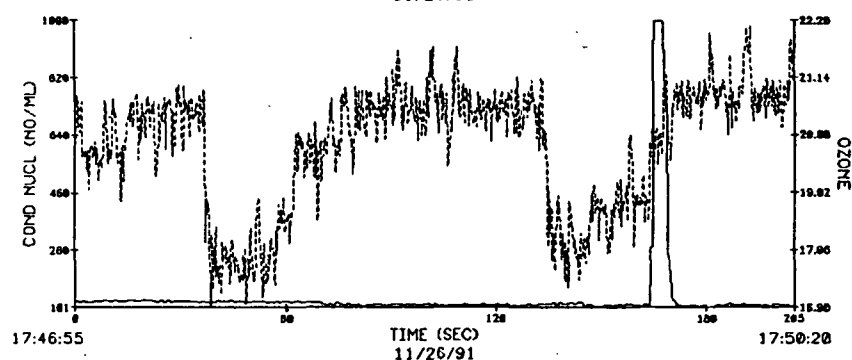
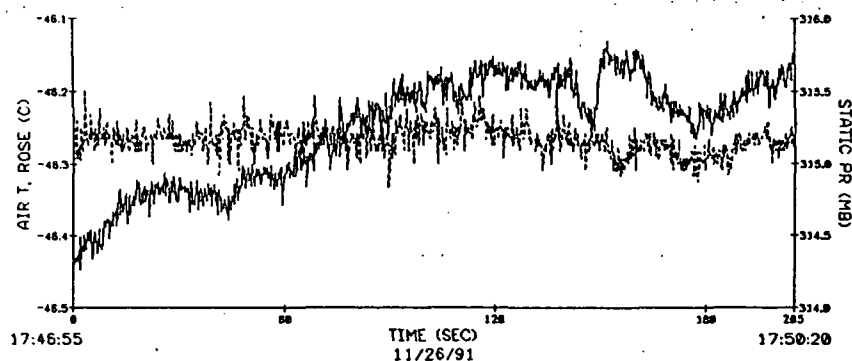
Wind Direction: 261.6 °

Wind Velocity: 15.76 m/sec

Pressure: 315.17 mb

Pressure Altitude: 8831.6 m

Aircraft Heading: 99.5 °



11/26/91 17:47:25.5395 17:47:26.6350 DeltaT: 0: 1.0955 TAS1 = 119.4 TAS2 = 119.3

1 mm

11/26/91

17:55:20-17:59:36

Leg # 8

Averages:

Temperature: -49.0 °C

Dew Point: Not Available

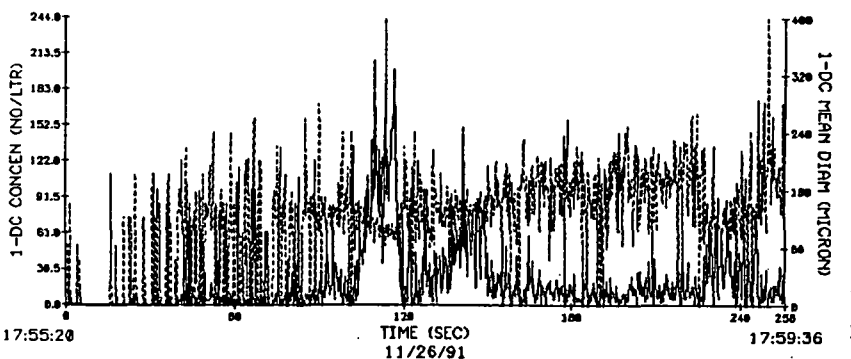
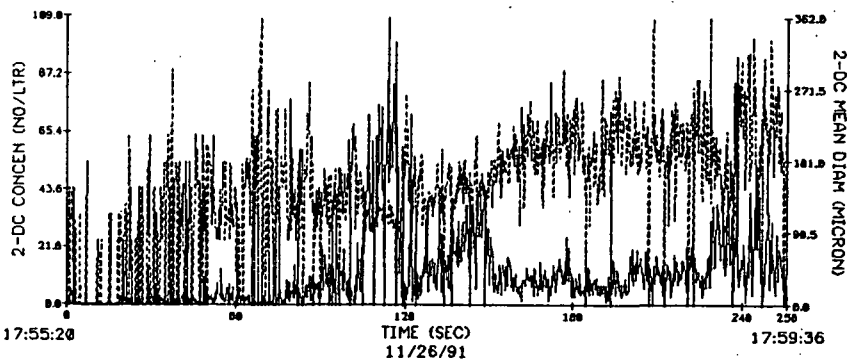
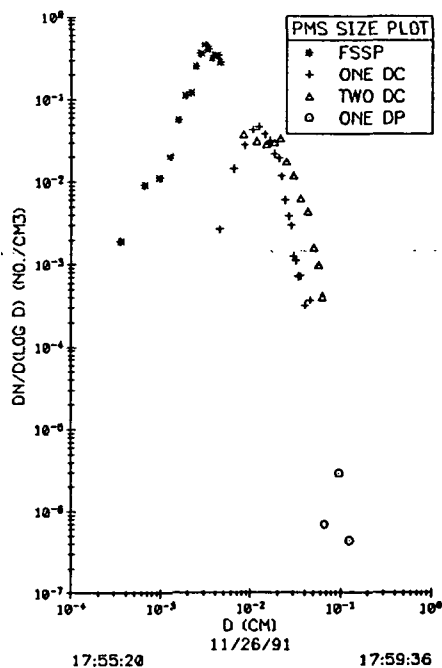
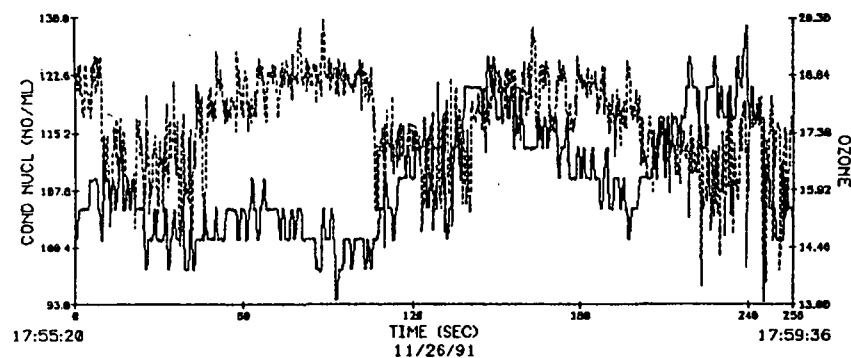
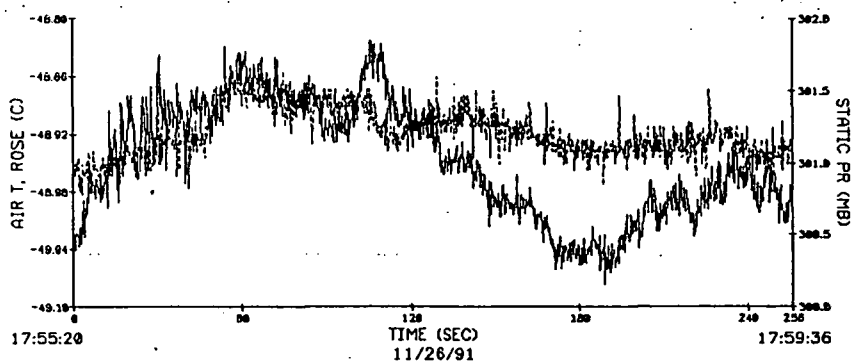
Wind Direction: 261.5 °

Wind Velocity: 17.96 m/sec

Pressure: 301.21 mb

Pressure Altitude: 9136.2 m

Aircraft Heading: 275.2 °



11/26/91 17:58:08.7048 17:58:09.8595 DeltaT: 0: 1.1547 TAS1 = 117.9 TAS2 = 117.9

1 mm

11/26/91

18:04:40-18:08:10

Leg # 9

Averages:

Temperature: -51.5 °C

Dew Point: -52.8 °C

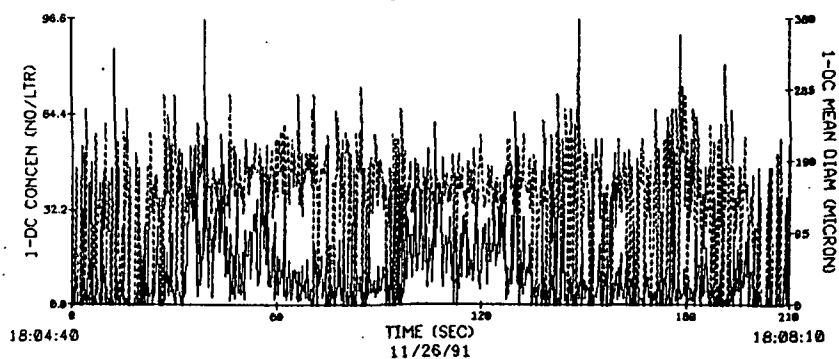
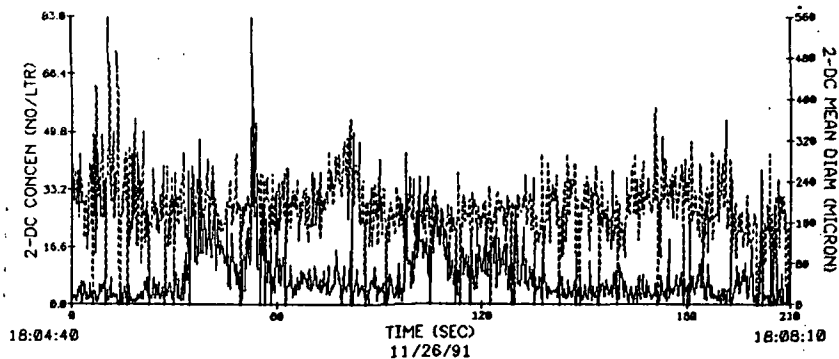
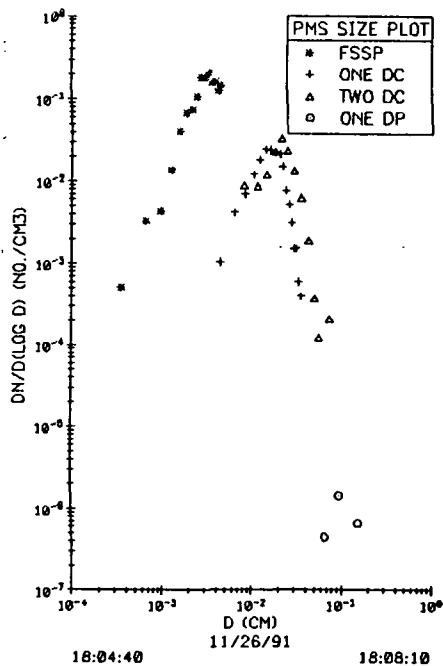
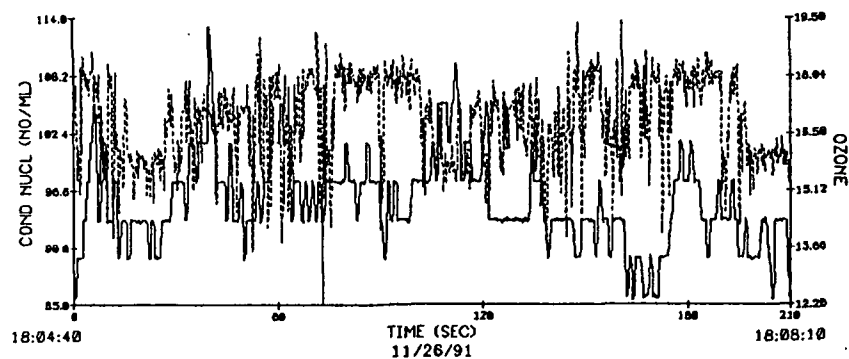
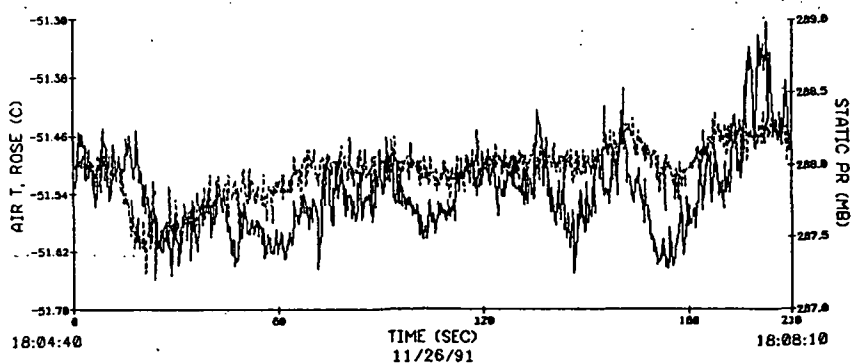
Wind Direction: 266.0 °

Wind Velocity: 18.26 m/sec

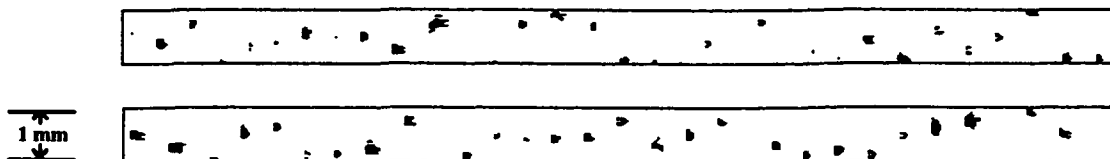
Pressure: 287.97 mb

Pressure Altitude: 9436.0 m

Aircraft Heading: 99.6 °



11/26/91 18:04:43.3130 18:04:46.2982 DeltaT: 0: 2.9852 TAS1 = 124.5 TAS2 = 124.5



11/26/91

18:12:40-18:17:33

Leg # 10

Averages:

Temperature: -54.2 °C

Dew Point: -54.6 °C

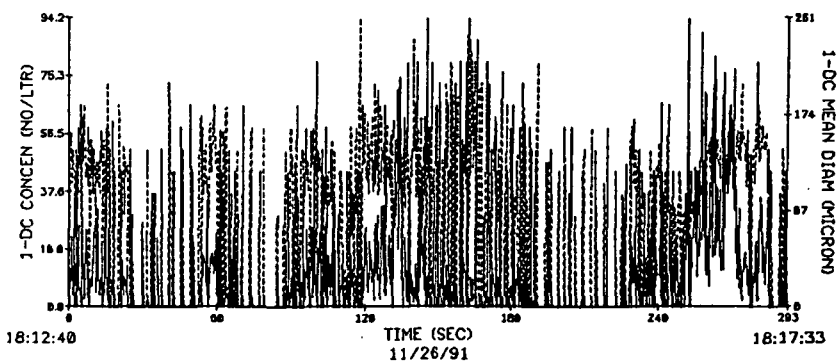
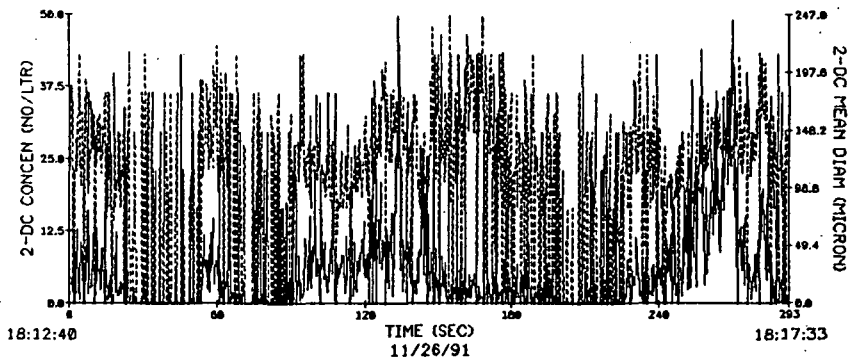
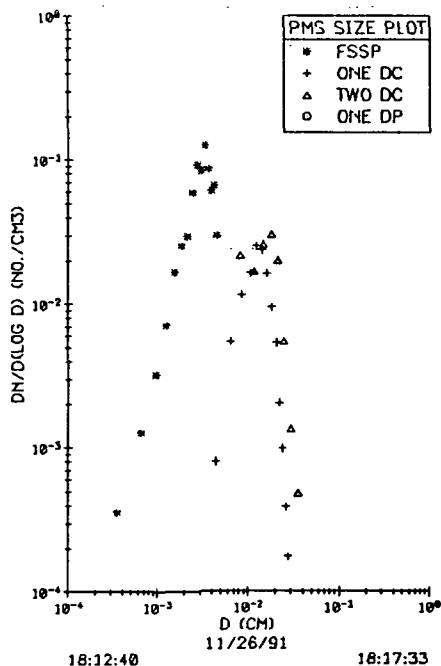
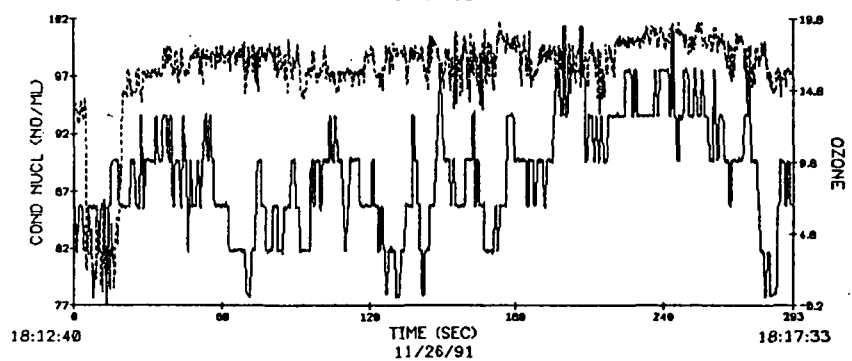
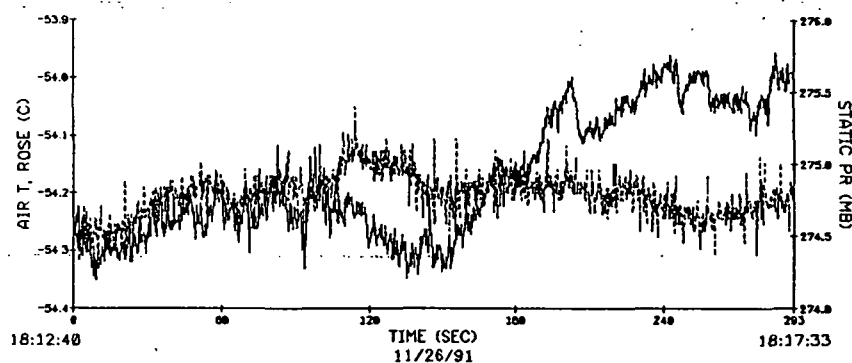
Wind Direction: 268.0 °

Wind Velocity: 19.92 m/sec

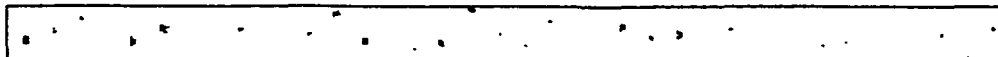
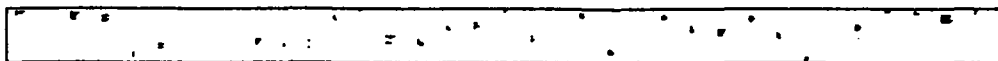
Pressure: 274.79 mb

Pressure Altitude: 9745.6 m

Aircraft Heading: 276.1 °



11/26/91 18:14:59.2440 18:15:01.9756 DeltaT: 0: 2.7316 TAS1 = 121.0 TAS2 = 120.8



11/26/91

18:23:30-18:29:45

Leg # 11

Averages:

Temperature: -56.9 °C

Dew Point: -57.0 °C

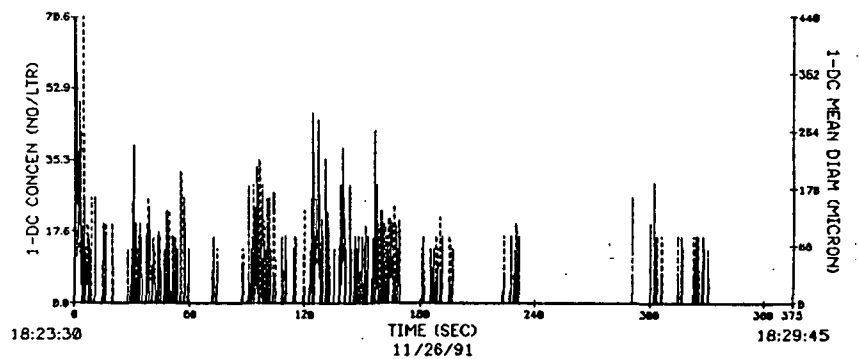
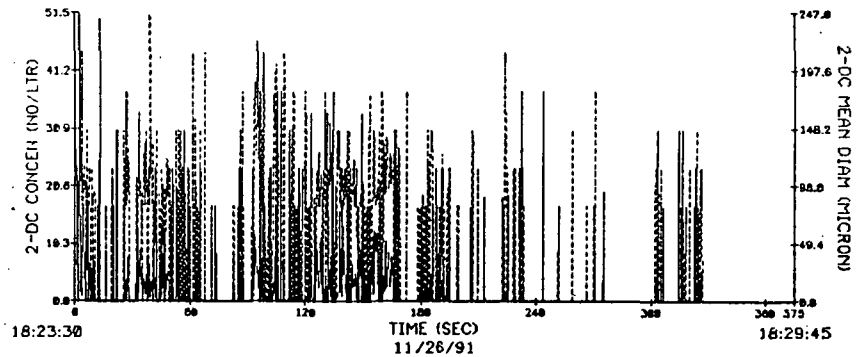
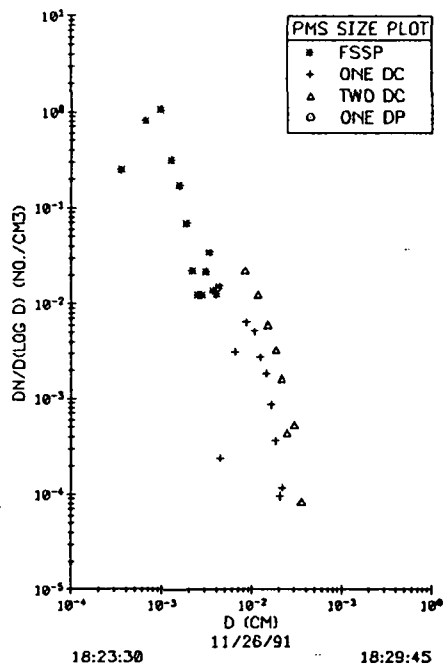
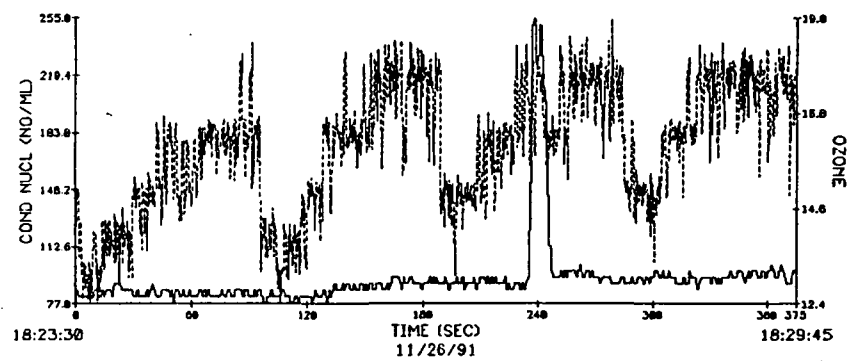
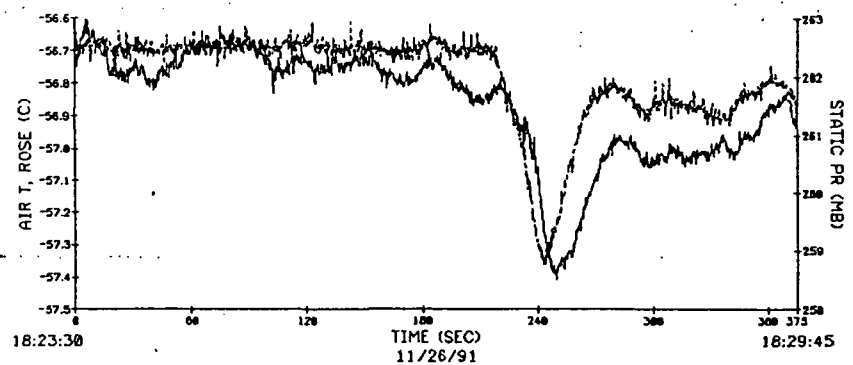
Wind Direction: 276.1 °

Wind Velocity: 18.75 m/sec

Pressure: 262.00 mb

Pressure Altitude: 10057.8 m

Aircraft Heading: 96.6 °



11/26/91 18:25:47.8747 18:25:49.9122 DeltaT: 0: 2.0375 TAS1 = 126.9 TAS2 = 127.0

1 mm

11/26/91

18:33:46-18:39:34

Leg # 12

Averages:

Temperature: -59.5 °C

Dew Point: -59.6 °C

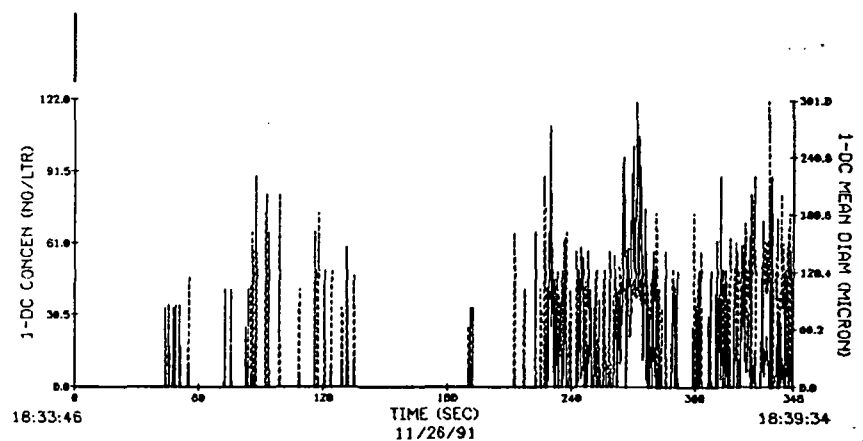
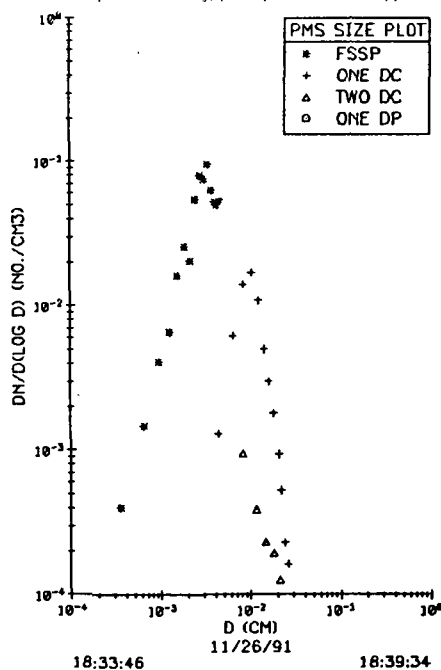
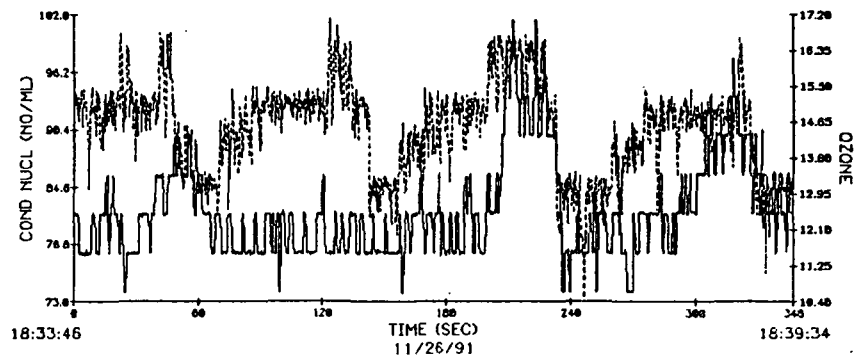
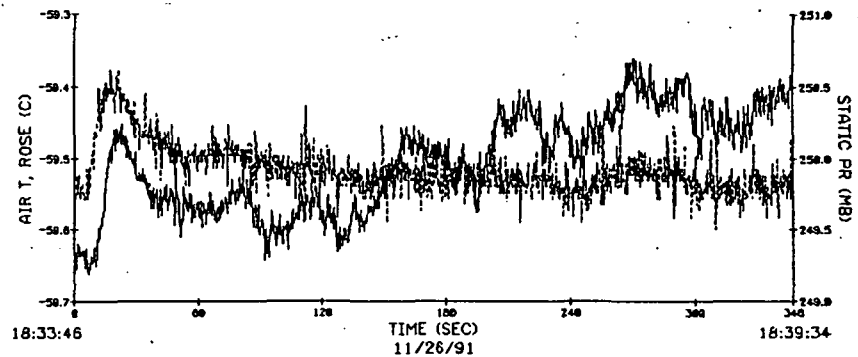
Wind Direction: 271.1 °

Wind Velocity: 19.56 m/sec

Pressure: 249.93 mb

Pressure Altitude: 10363.9 m

Aircraft Heading: 276.5 °

**No 2-DC DATA**

11/26/91

18:44:29-18:47:55

Leg # 13

Averages:

Temperature: -59.8 °C

Dew Point: Not Available

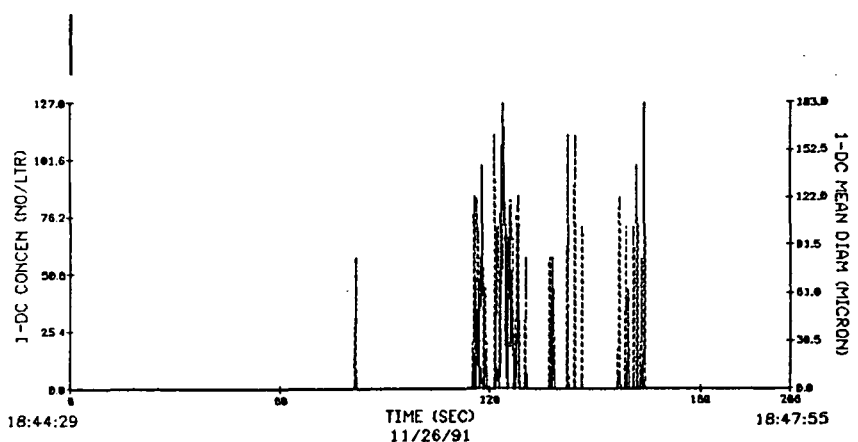
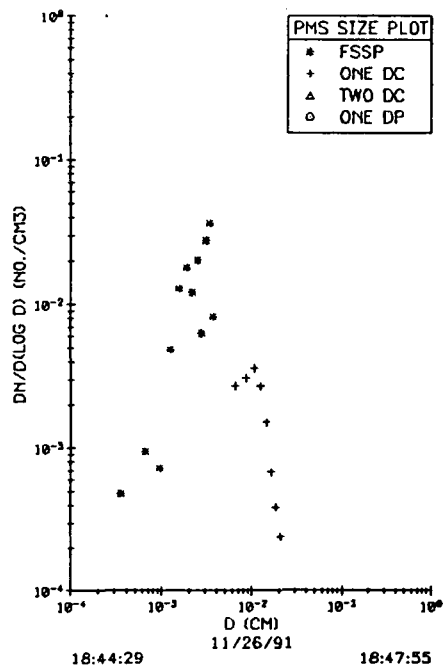
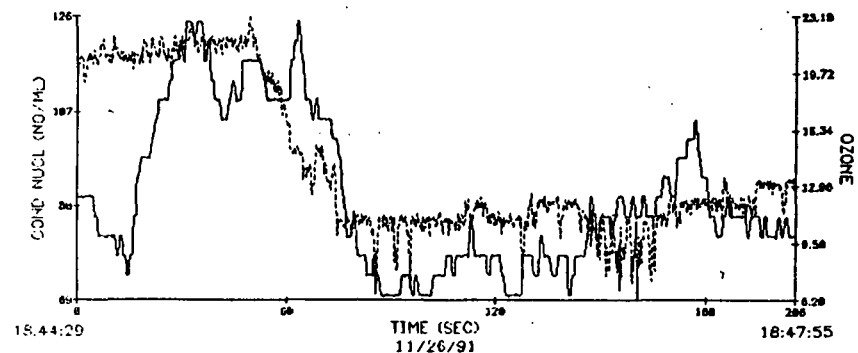
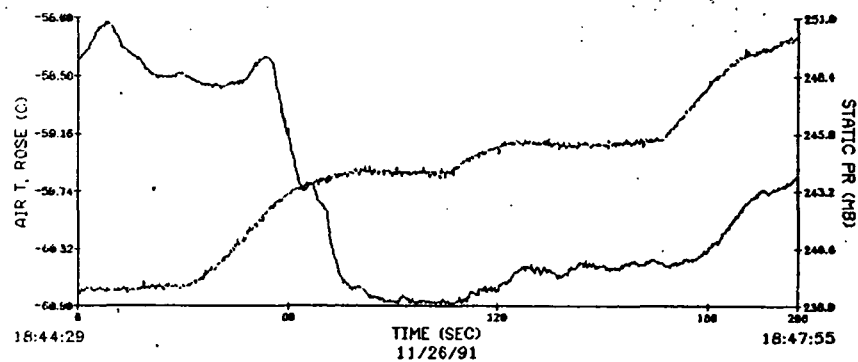
Wind Direction: 266.5 °

Wind Velocity: 17.89 m/sec

Pressure: 244.28 mb

Pressure Altitude: 10511.8 m

Aircraft Heading: 98.7 °

**No 2-DC DATA**

11/26/91

18:50:55-18:57:26

Leg # 14

Averages:

Temperature: -52.9 ° C

Dew Point: Not Available

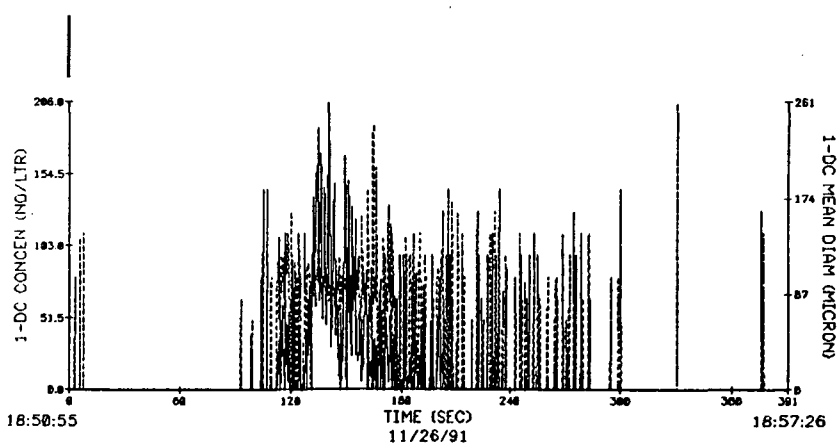
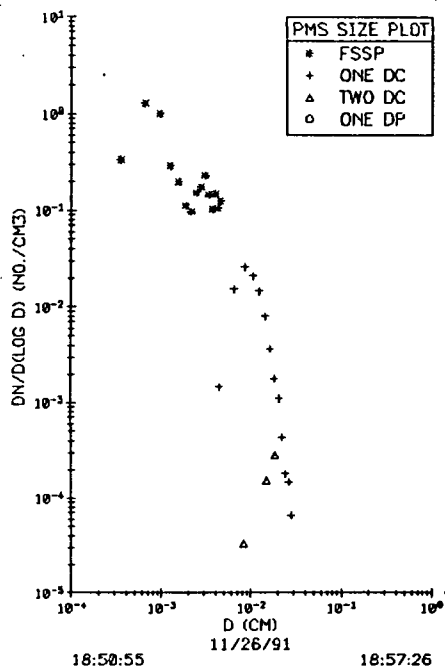
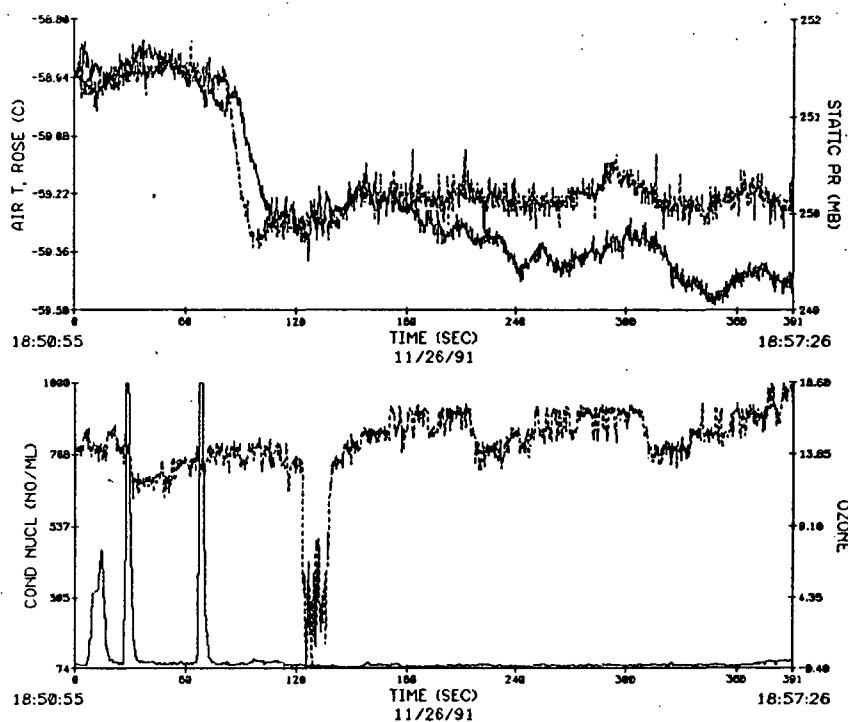
Wind Direction: 266.2 °

Wind Velocity: 18.78 m/sec

Pressure: 250.41 mb

Pressure Altitude: 10351.6 m

Aircraft Heading: 273.8 °



No 2-DC DATA

11/26/91

19:02:55-19:06:00

Leg # 15

Averages:

Temperature: -56.7 °C

Dew Point: Not Available

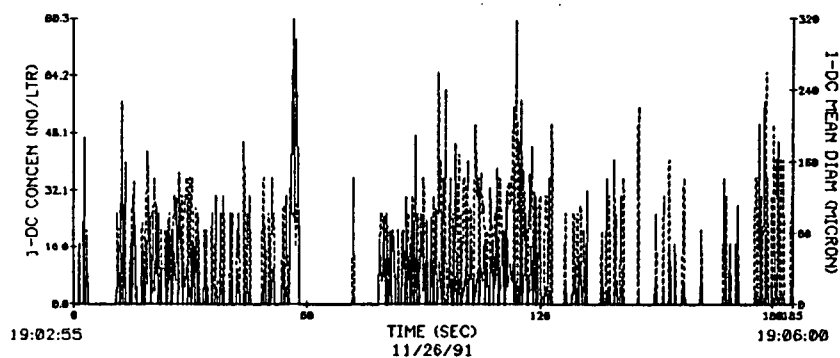
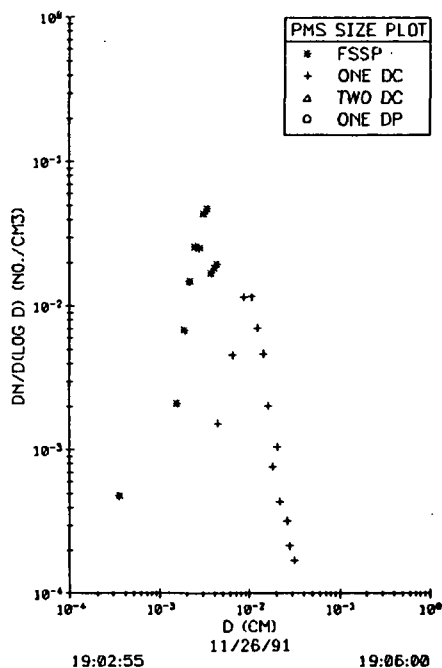
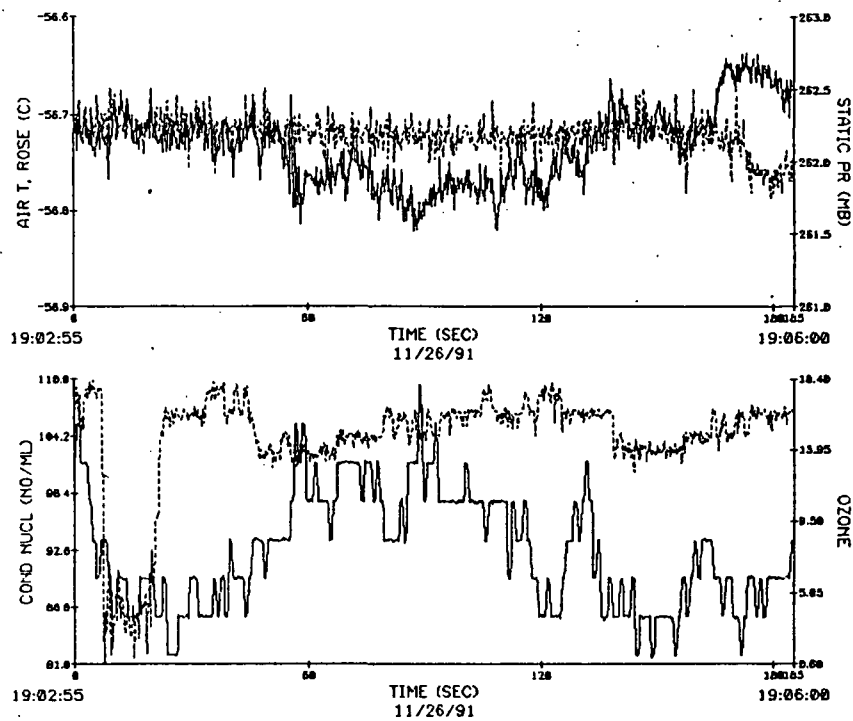
Wind Direction: 267.6 °

Wind Velocity: 18.35 m/sec

Pressure: 262.19 mb

Pressure Altitude: 10052.9 m

Aircraft Heading: 99.6 °

**No 2-DC DATA**

11/26/91

19:11:00-19:15:32

Leg # 16

Averages:

Temperature: -54.1 ° C

Dew Point: Not Available

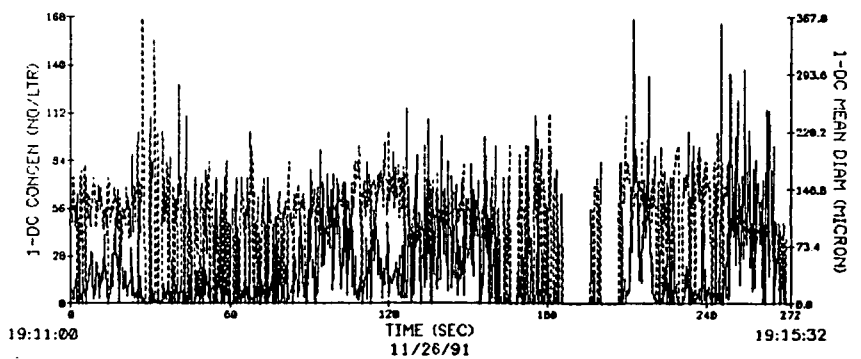
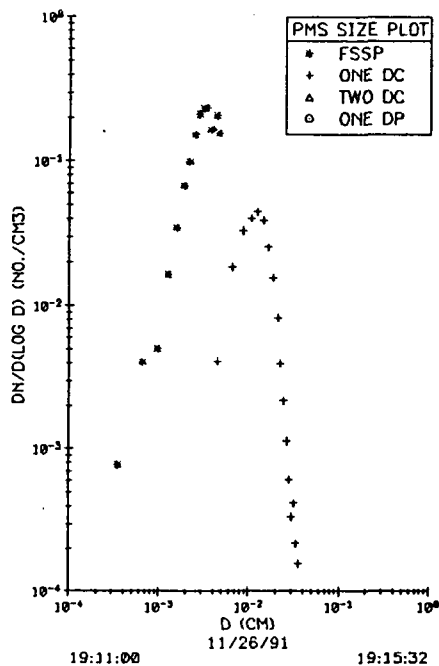
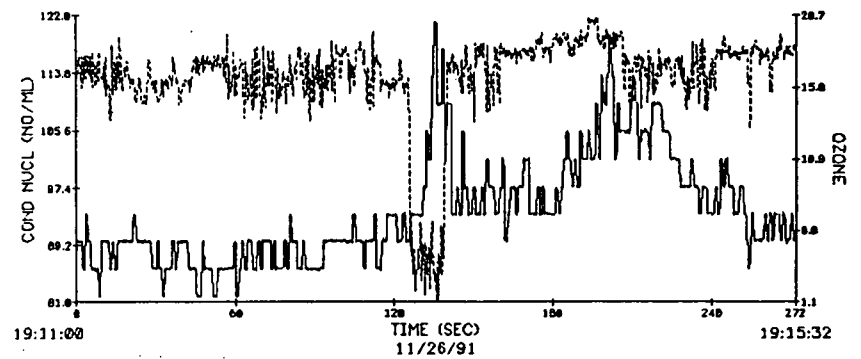
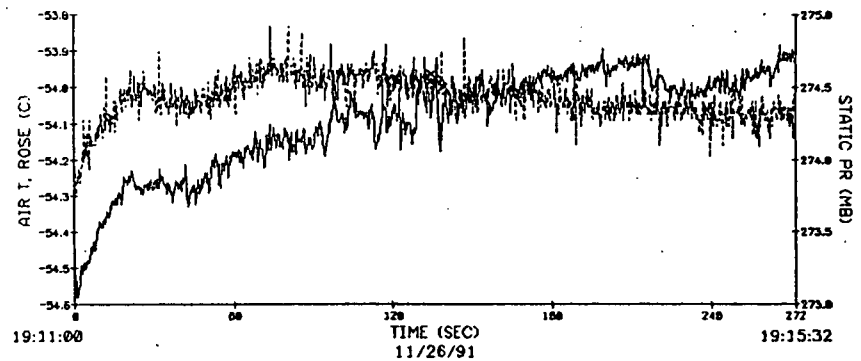
Wind Direction: 265.7 °

Wind Velocity: 20.93 m/sec

Pressure: 274.43 mb

Pressure Altitude: 9754.3 m

Aircraft Heading: 275.4 °



No 2-DC DATA

11/26/91

19:20:40-19:23:30

Leg # 17

Averages:

Temperature: -51.2 °C

Dew Point: Not Available

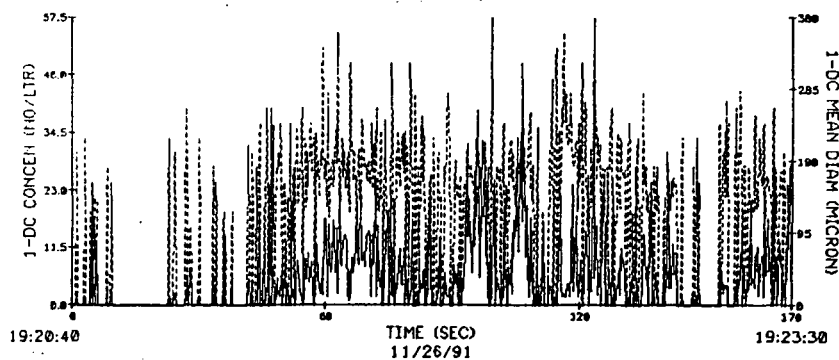
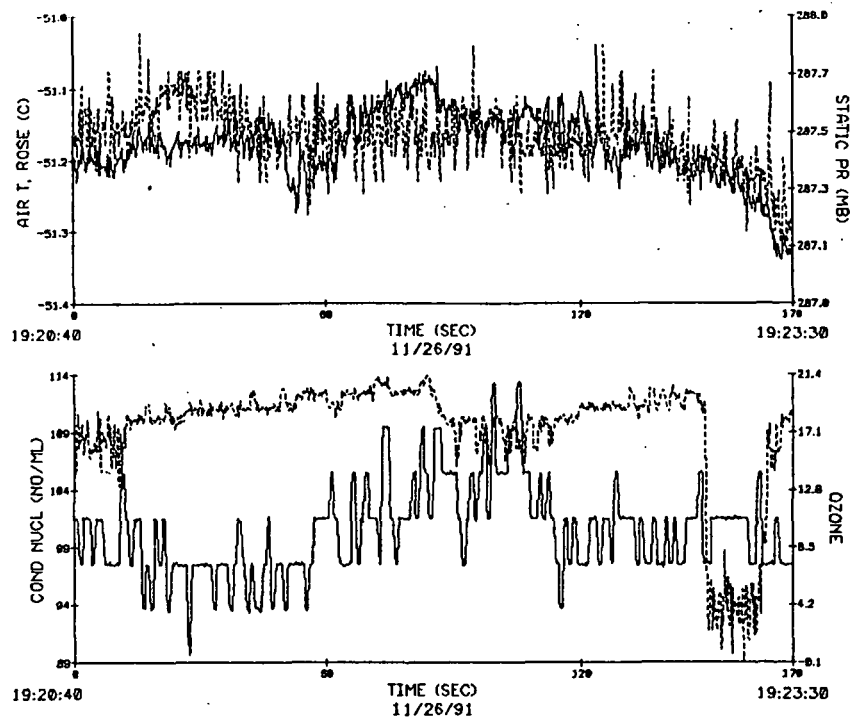
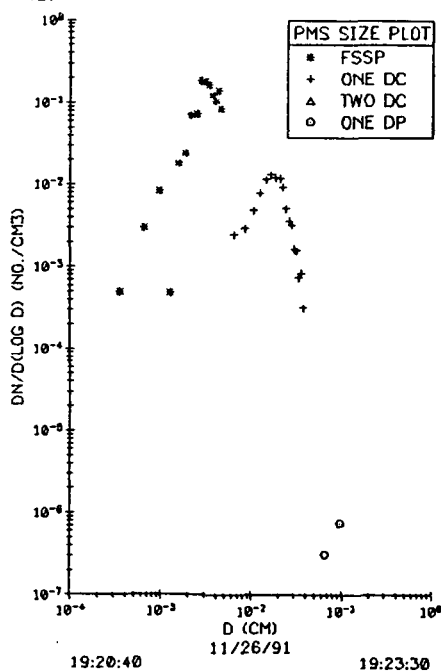
Wind Direction: 264.5 °

Wind Velocity: 20.41 m/sec

Pressure: 287.58 mb

Pressure Altitude: 9444.9 m

Aircraft Heading: 99.6 °

**No 2-DC DATA**

11/26/91

19:25:30-19:29:31

Leg # 18

Averages:

Temperature: -48.7 °C

Dew Point: Not Available

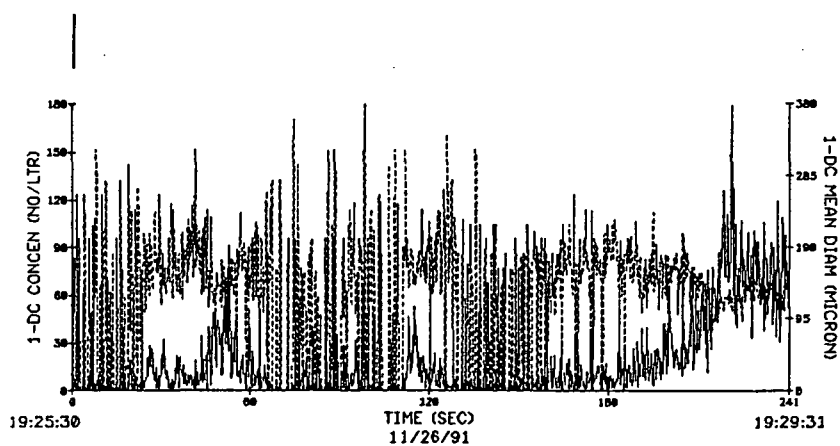
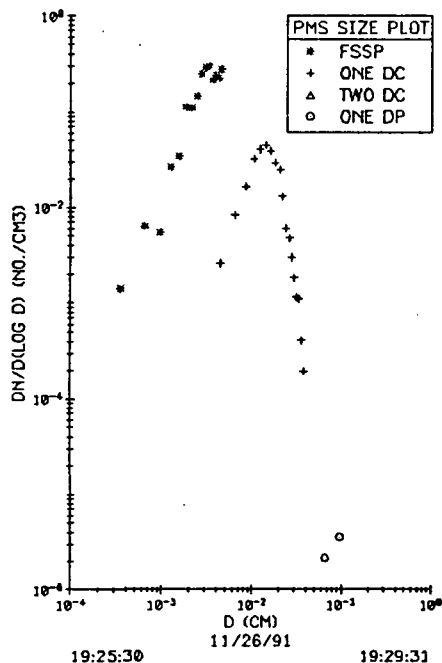
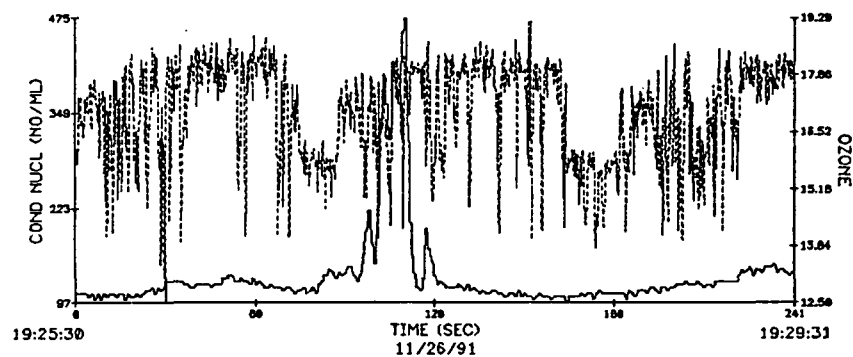
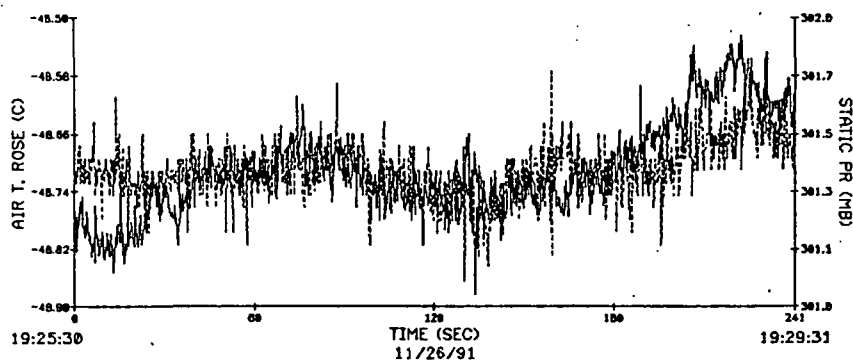
Wind Direction: 259.9 °

Wind Velocity: 22.15 m/sec

Pressure: 301.48 mb

Pressure Altitude: 9130.3 m

Aircraft Heading: 274.0 °



No 2-DC DATA

11/26/91

19:34:20-19:37:00

Leg # 19

Averages:

Temperature: -45.9 °C

Dew Point: Not Available

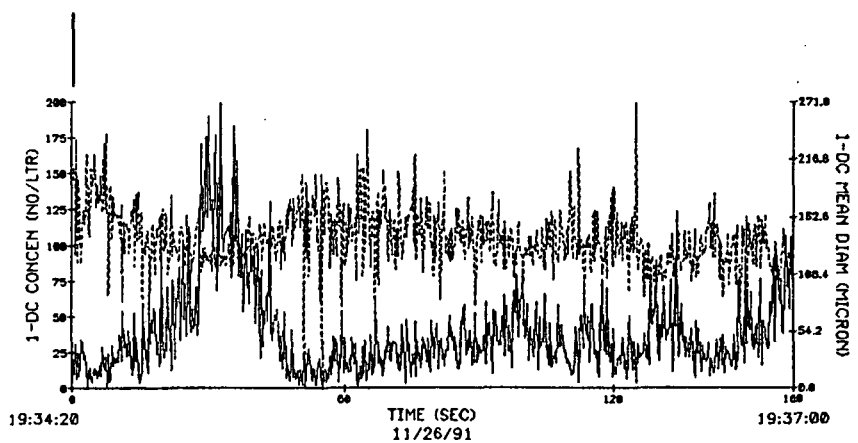
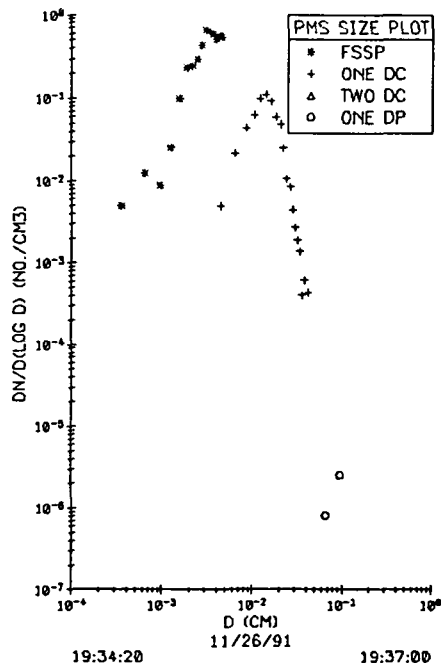
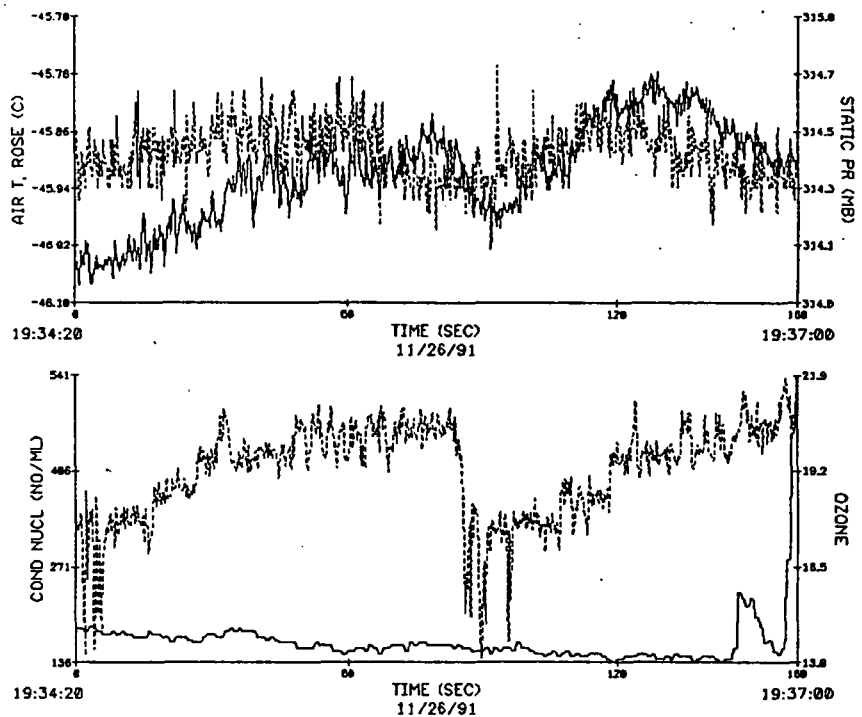
Wind Direction: 256.3 °

Wind Velocity: 21.03 m/sec

Pressure: 314.52 mb

Pressure Altitude: 8845.3 m

Aircraft Heading: 102.8 °

**No 2-DC DATA**

11/28/91

16:59:25-17:02:30

Leg # 1

Averages:

Temperature: -51.6 °C

Dew Point: Not Available

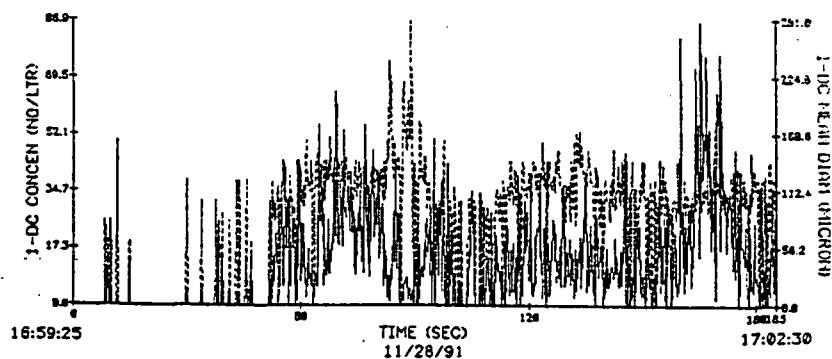
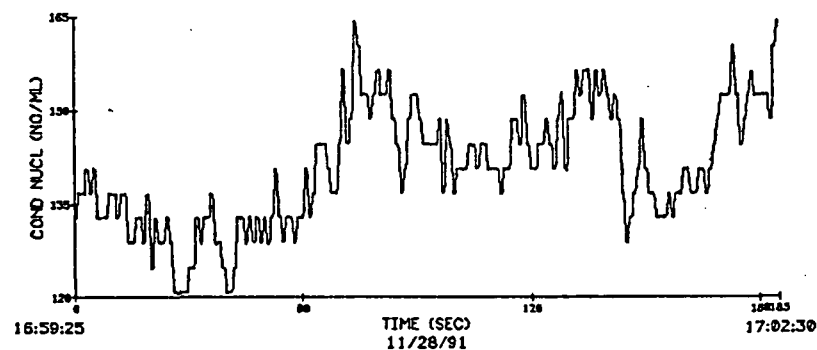
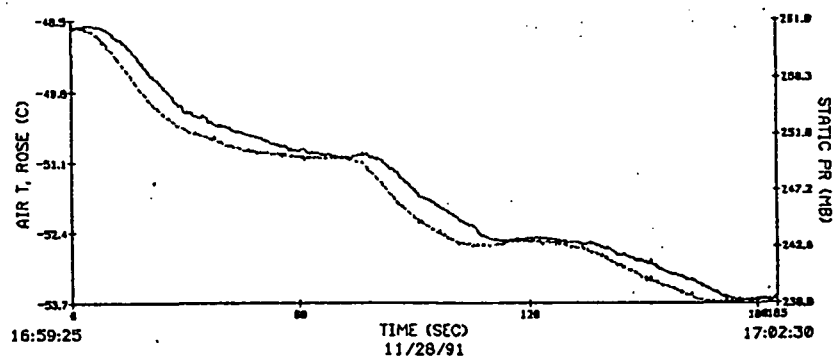
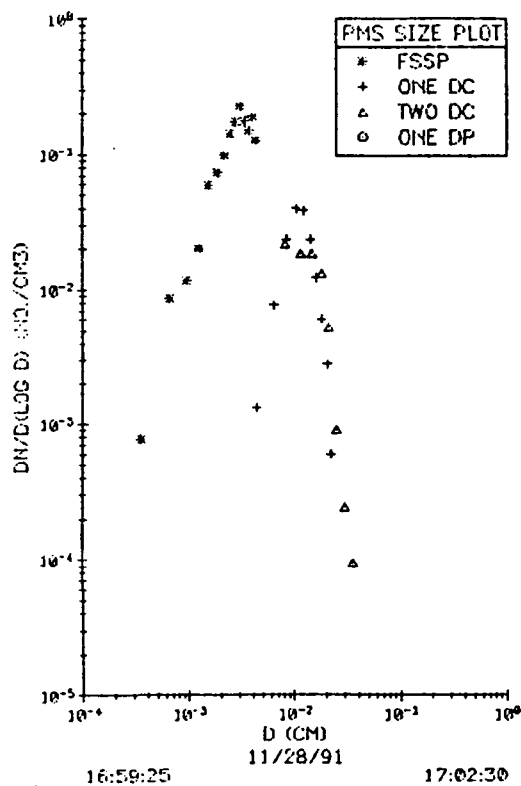
Wind Direction: 254.1 °

Wind Velocity: 39.23 m/sec

Pressure: 246.11 mb

Pressure Altitude: 10464.8 m

Aircraft Heading: 75.1 °

**No 2-DC DATA**

11/28/91

17:08:00-17:17:15

Leg # 2

Averages:

Temperature: -58.5 °C

Dew Point: Not Available

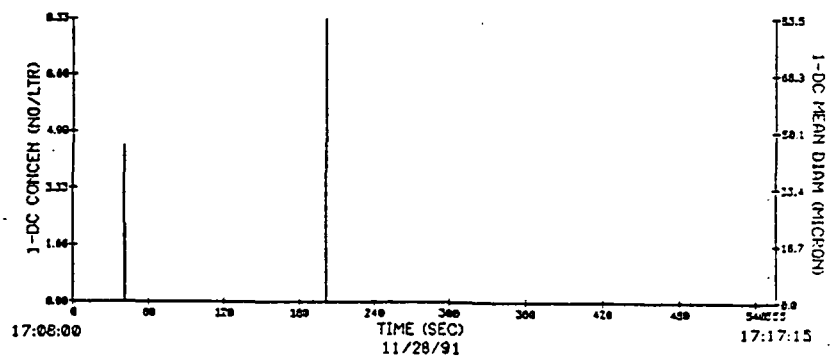
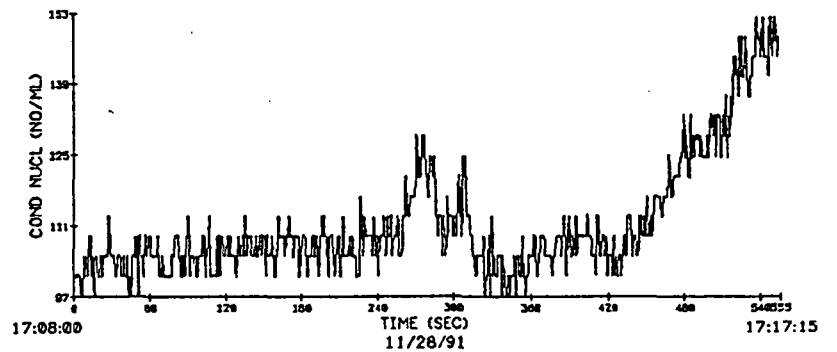
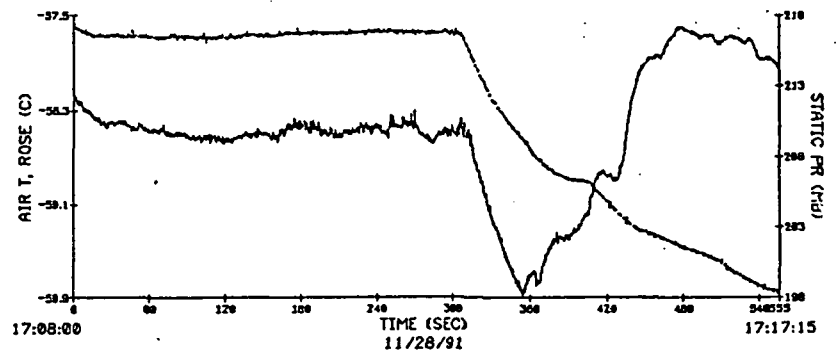
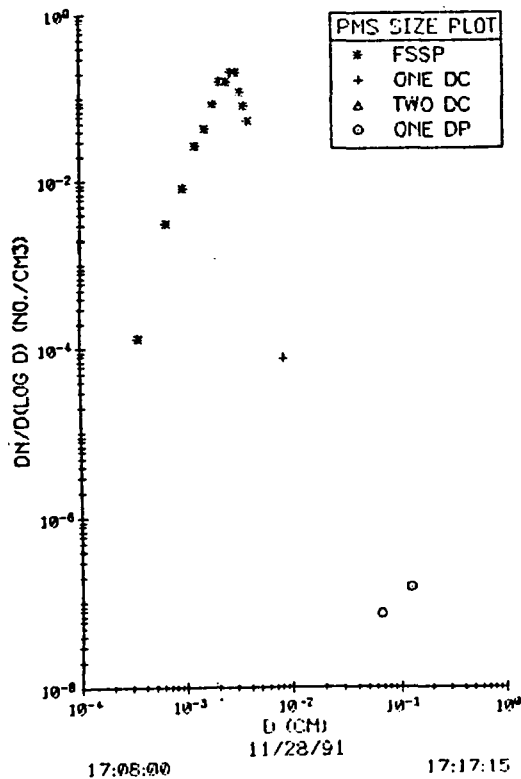
Wind Direction: 261.4 °

Wind Velocity: 43.46 m/sec

Pressure: 211.10 mb

Pressure Altitude: 11440.1 m

Aircraft Heading: 259.5 °

**No 2-DC DATA**

11/28/91

17:23:40-17:26:30

Leg # 3

Averages:

Temperature: -59.7 °C

Dew Point: Not Available

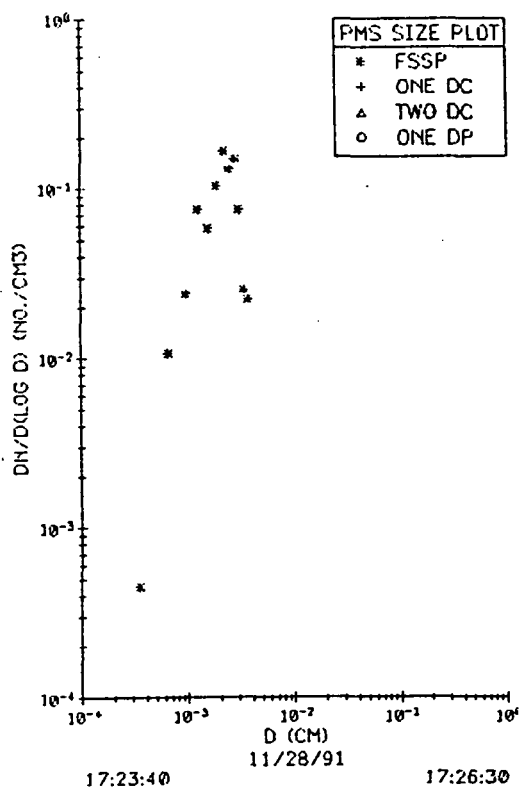
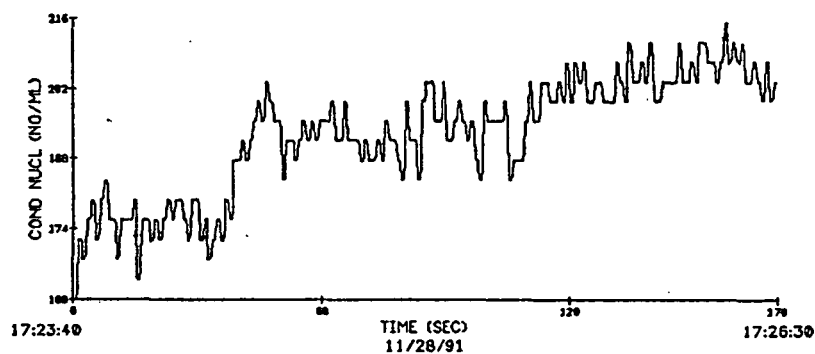
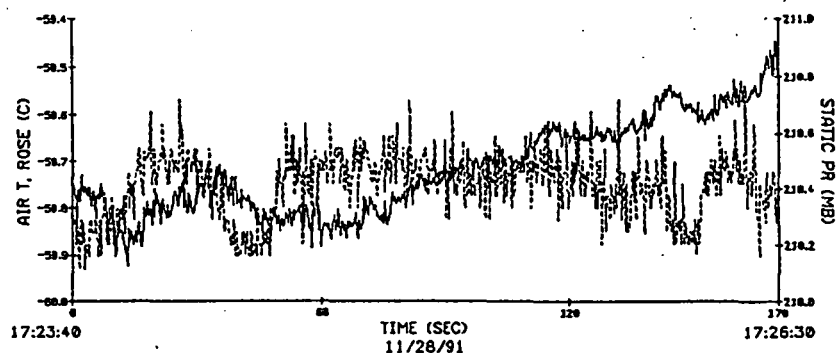
Wind Direction: 263.8 °

Wind Velocity: 40.67 m/sec

Pressure: 210.41 mb

Pressure Altitude: 11457.8 m

Aircraft Heading: 71.2 °



No 2-DC DATA

11/28/91

17:30:00-17:37:30

Leg # 4

Averages:

Temperature: -58.6 °C

Dew Point: Not Available

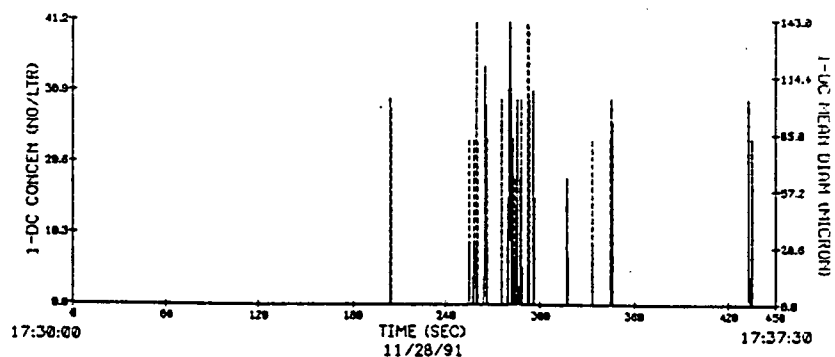
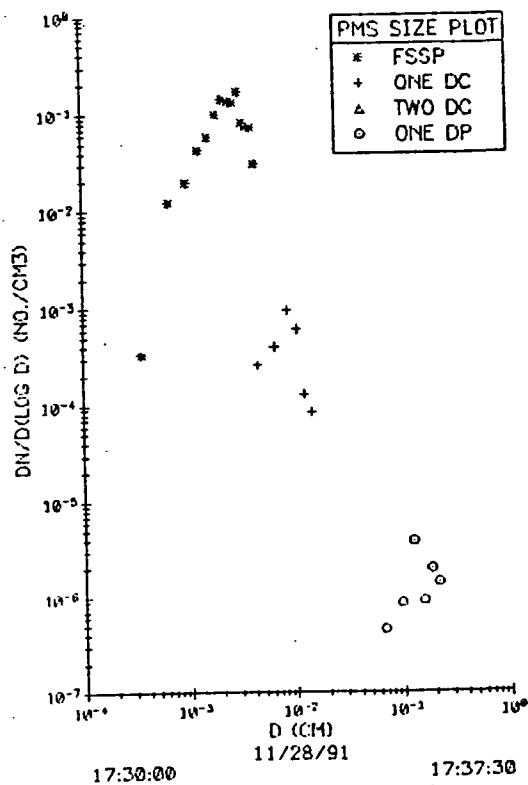
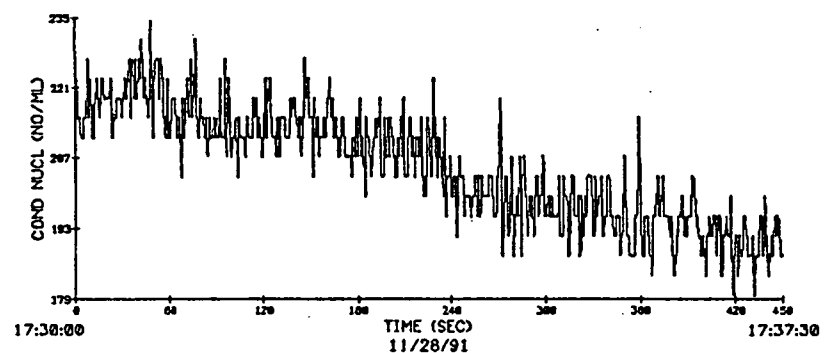
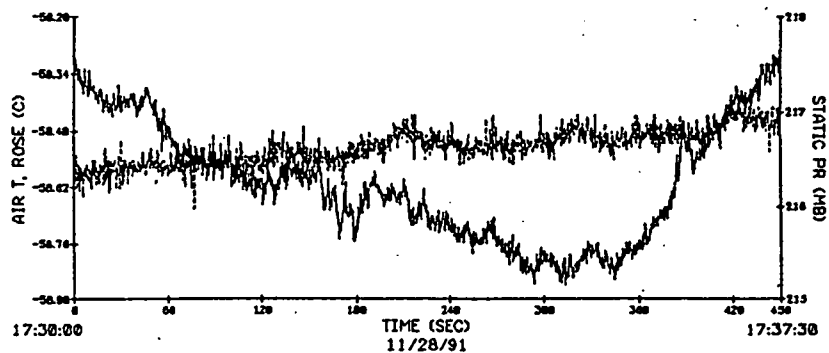
Wind Direction: 259.0 °

Wind Velocity: 42.29 m/sec

Pressure: 216.64 mb

Pressure Altitude: 11275.1 m

Aircraft Heading: 257.8 °

**No 2-DC DATA**

11/28/91

17:42:00-17:44:30

Leg # 5

Averages:

Temperature: -55.7 °C

Dew Point: Not Available

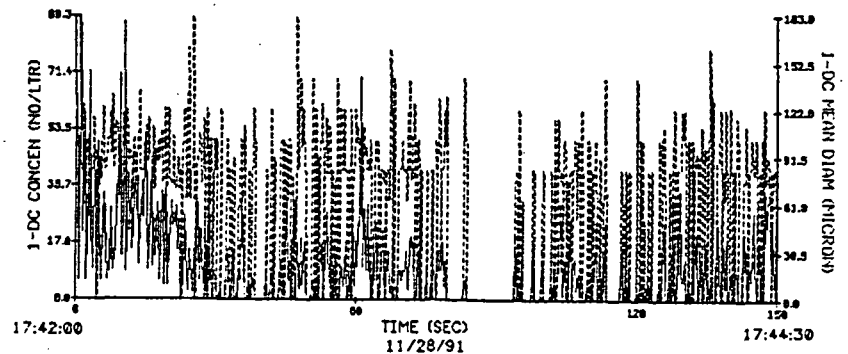
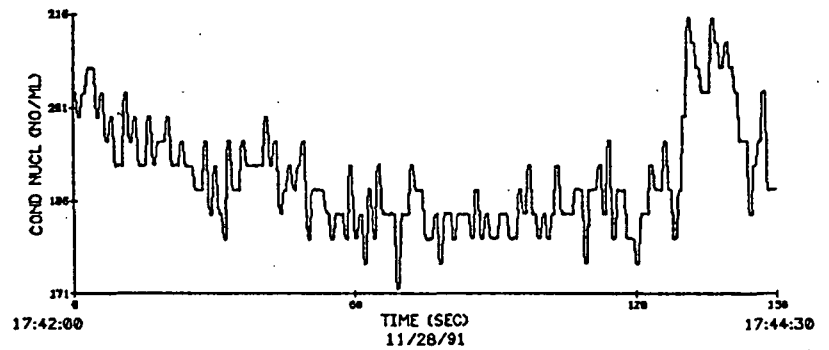
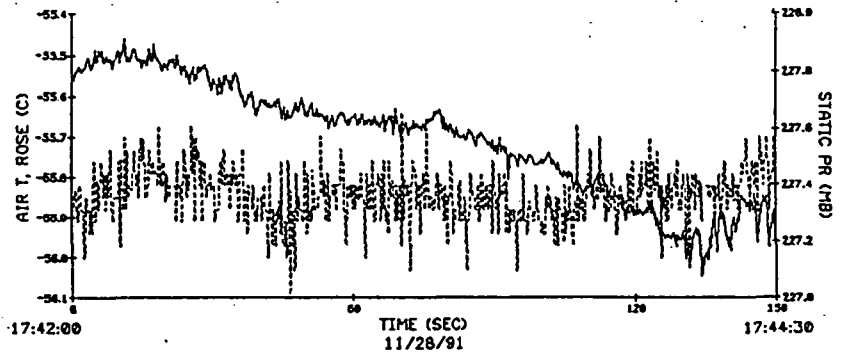
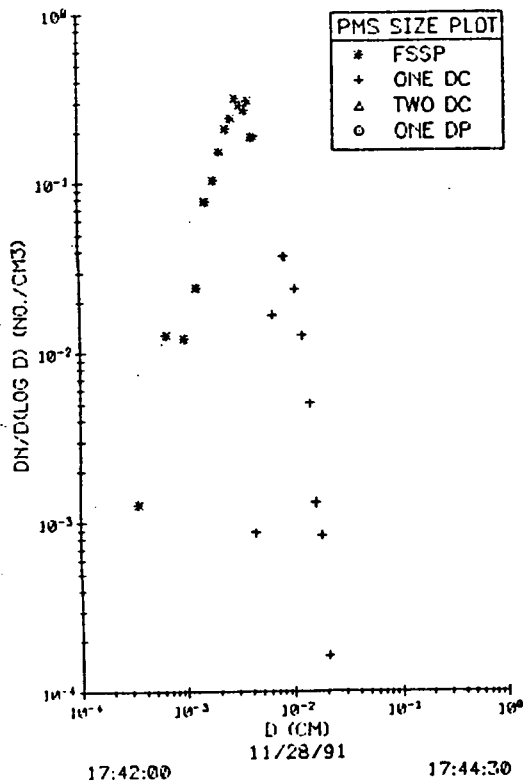
Wind Direction: 257.6 °

Wind Velocity: 39.54 m/sec

Pressure: 227.37 mb

Pressure Altitude: 10969.7 m

Aircraft Heading: 80.7 °



No 2-DC DATA

11/28/91

17:47:30-17:56:00

Leg # 6

Averages:

Temperature: -53.2 °C

Dew Point: -53.2 °C

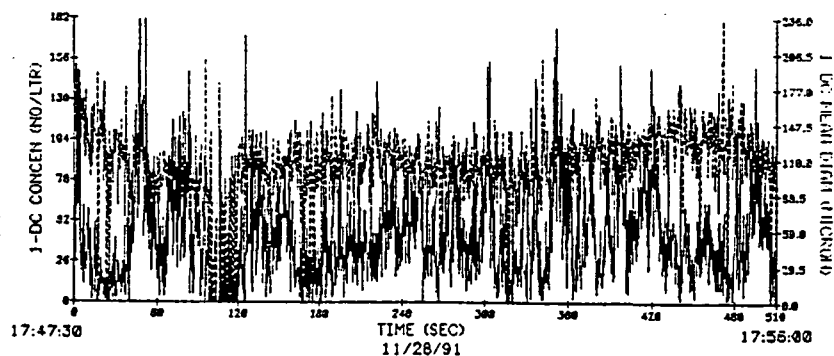
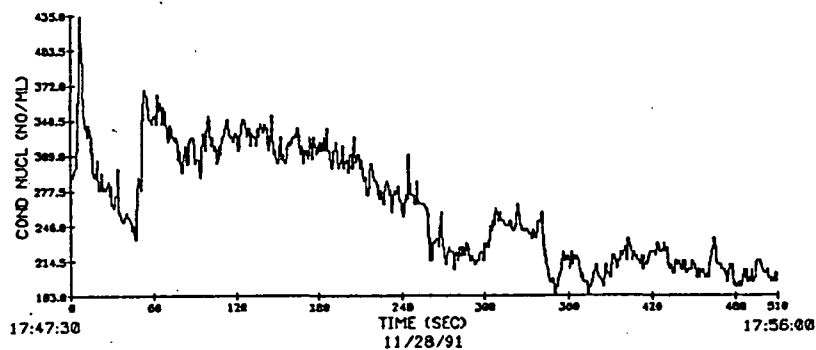
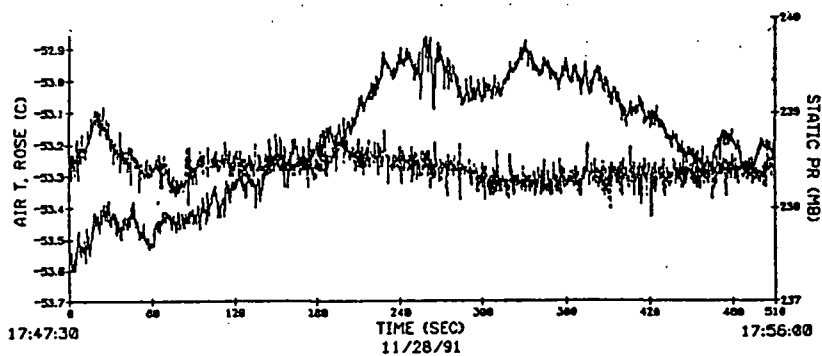
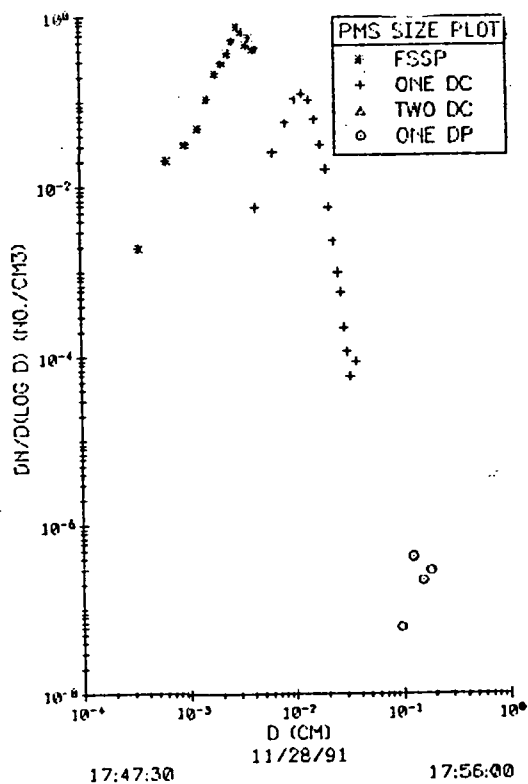
Wind Direction: 259.2 °

Wind Velocity: 40.19 m/sec

Pressure: 238.42 mb

Pressure Altitude: 10667.0 m

Aircraft Heading: 260.2 °

**No 2-DC DATA**

11/28/91

18:00:00-18:03:00

Leg # 7

Averages:

Temperature: -53.1 °C

Dew Point: -53.3 °C

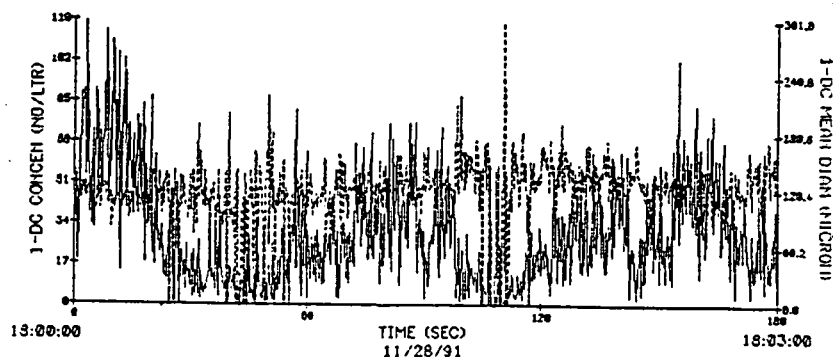
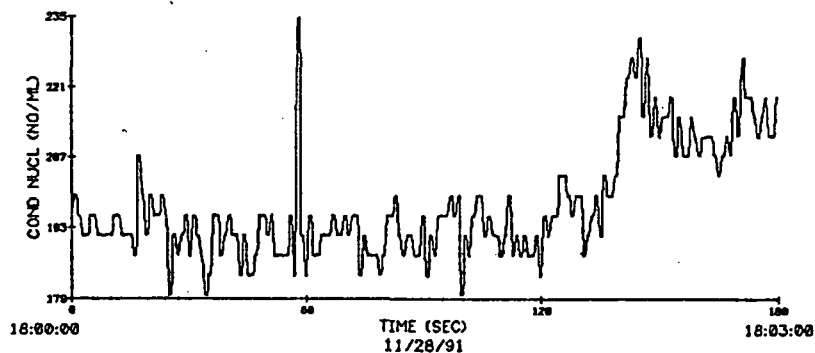
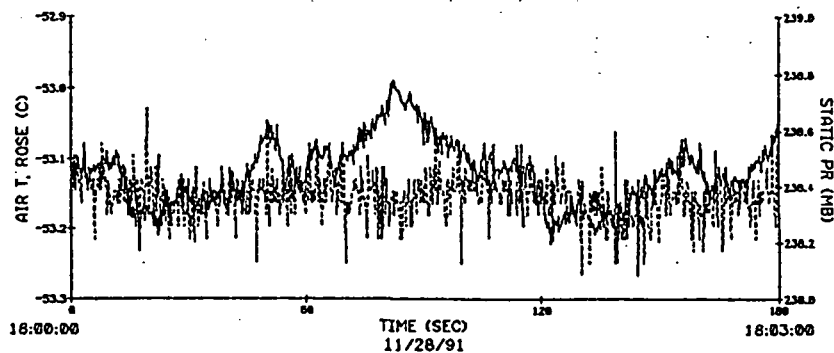
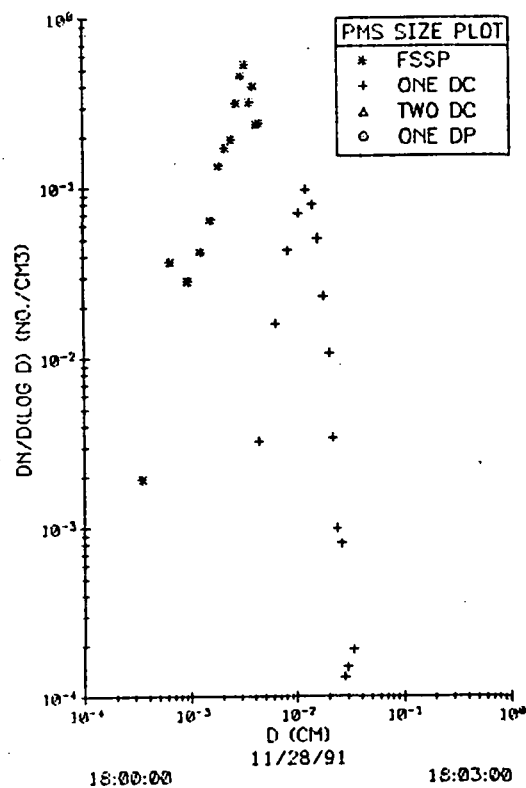
Wind Direction: 260.0 °

Wind Velocity: 40.42 m/sec

Pressure: 238.37 mb

Pressure Altitude: 10668.5 m

Aircraft Heading: 74.5 °

**No 2-DC DATA**

11/28/91

18:06:30-18:08:26

Leg # 8a

Averages:

Temperature: -53.1 °C

Dew Point: -53.3 °C

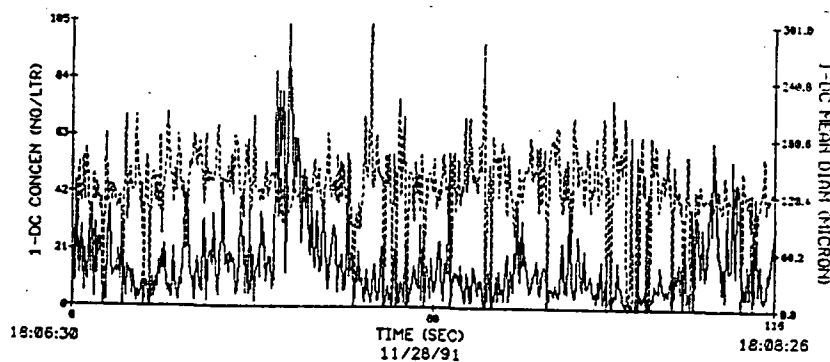
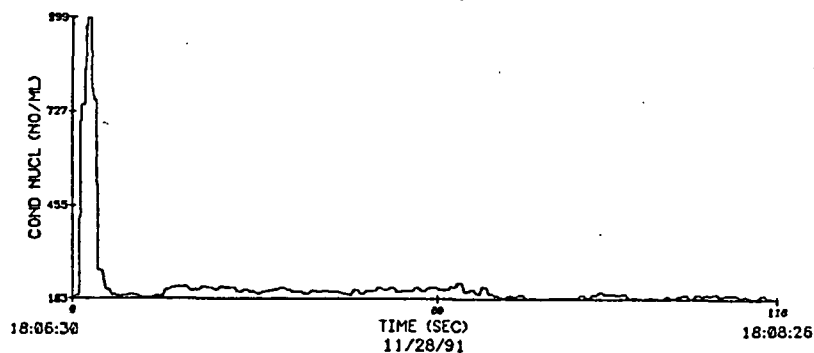
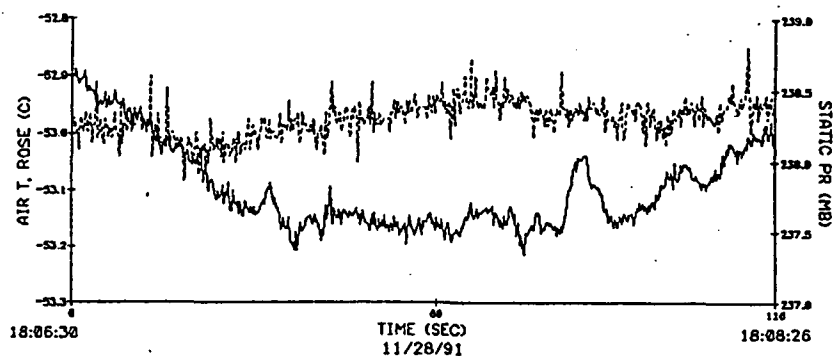
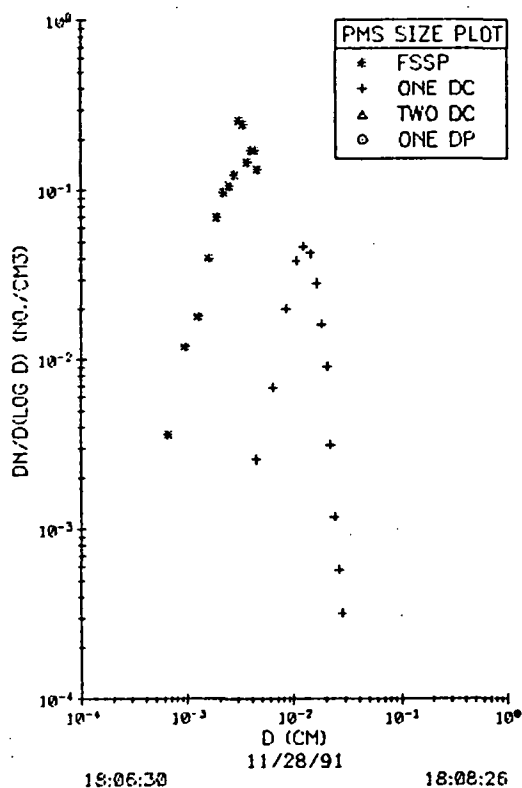
Wind Direction: 260.0 °

Wind Velocity: 42.92 m/sec

Pressure: 238.35 mb

Pressure Altitude: 10669.1 m

Aircraft Heading: 254.8 °



No 2-DC DATA

11/28/91

18:10:06-18:13:30

Leg # 8b

Averages:

Temperature: -50.7 °C

Dew Point: -50.9 °C

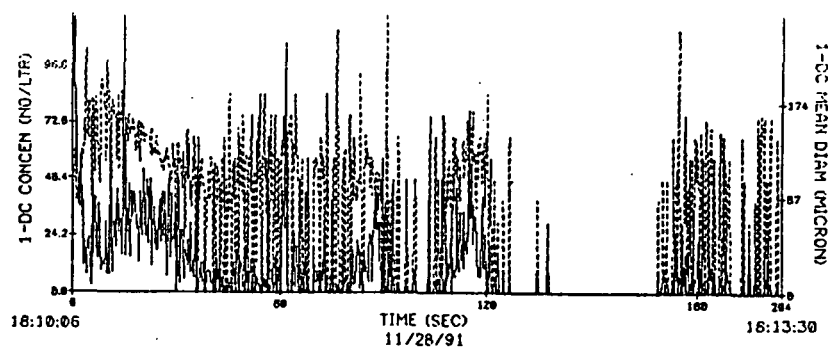
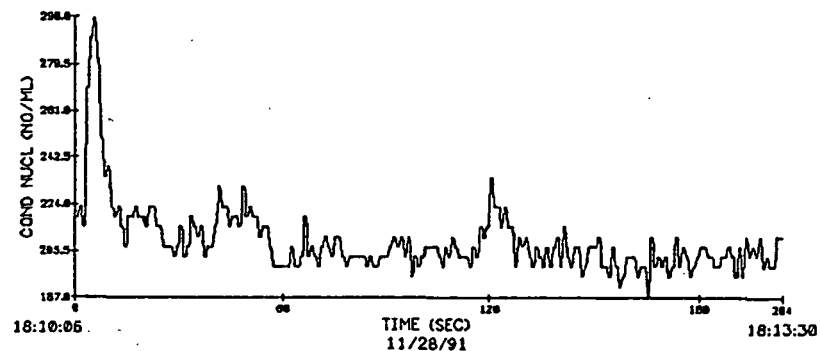
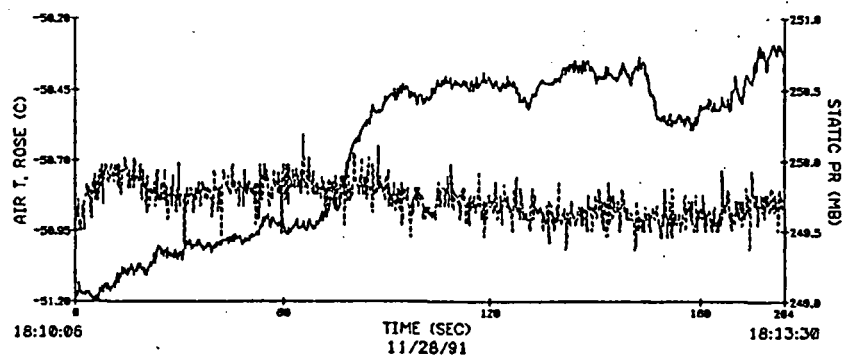
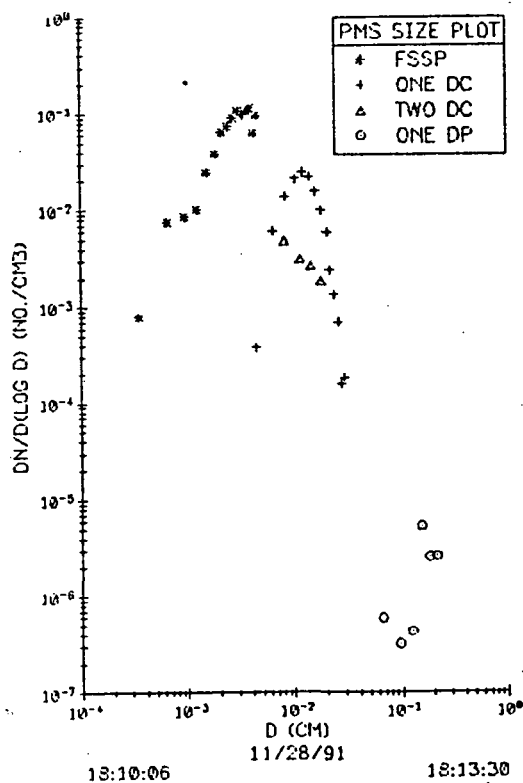
Wind Direction: 259.6 °

Wind Velocity: 41.63 m/sec

Pressure: 249.72 mb

Pressure Altitude: 10369.2 m

Aircraft Heading: 257.3 °



No 2-DC DATA

11/28/91

18:17:30-18:20:30

Leg # 9

Averages:

Temperature: -47.9 °C

Dew Point: -49.0 °C

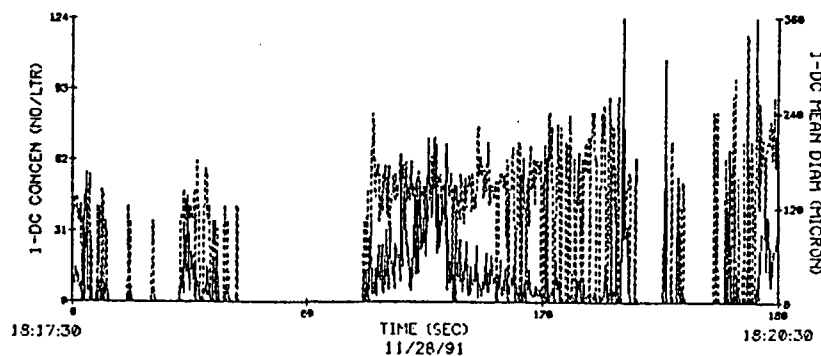
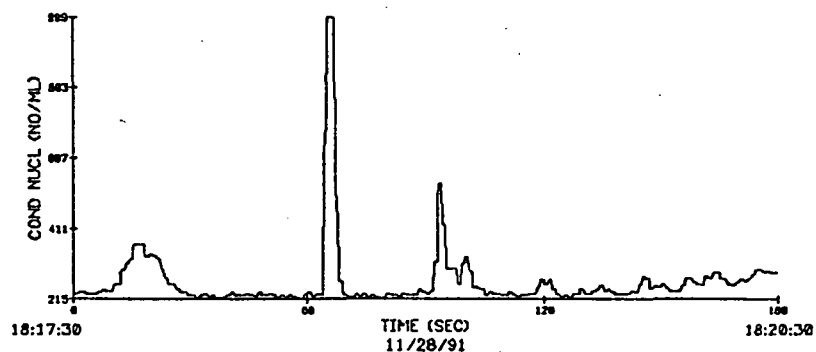
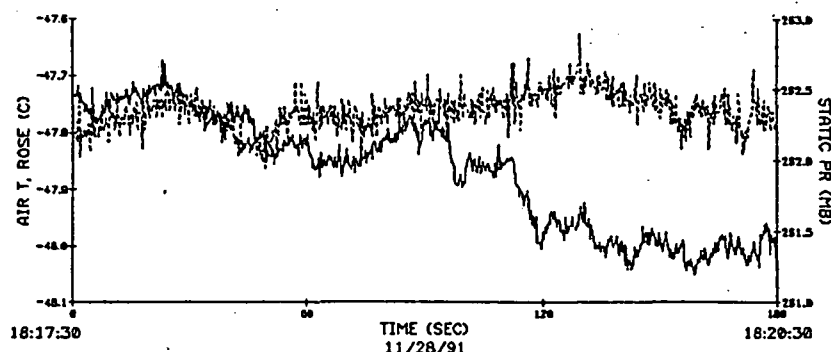
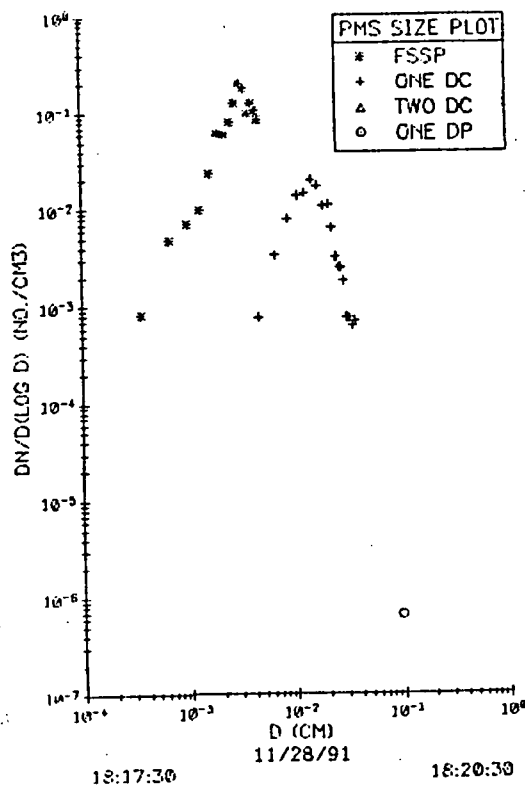
Wind Direction: 260.3 °

Wind Velocity: 39.79 m/sec

Pressure: 262.36 mb

Pressure Altitude: 10048.8 m

Aircraft Heading: 75.6 °



No 2-DC DATA

11/28/91

18:24:00-18:31:30

Leg # 10

Averages:

Temperature: -45.5 °C

Dew Point: -45.9 °C

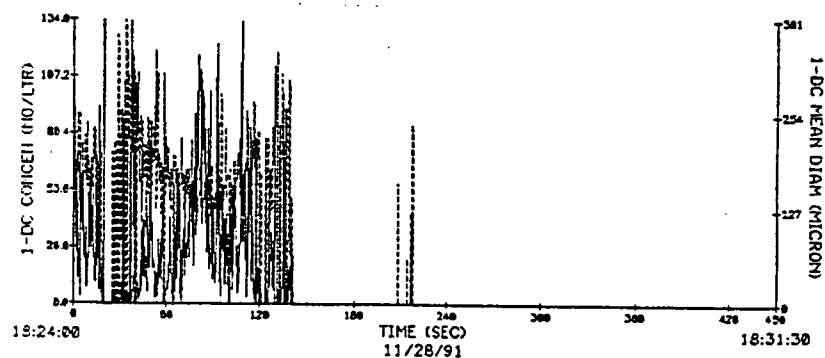
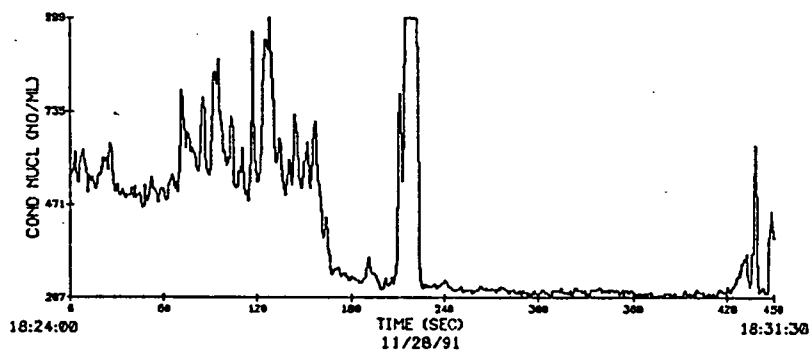
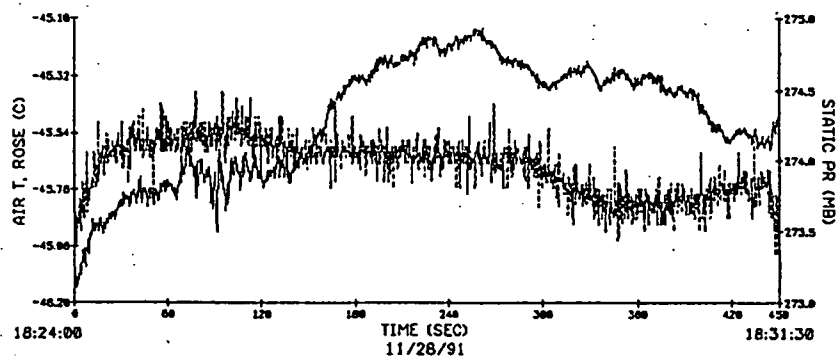
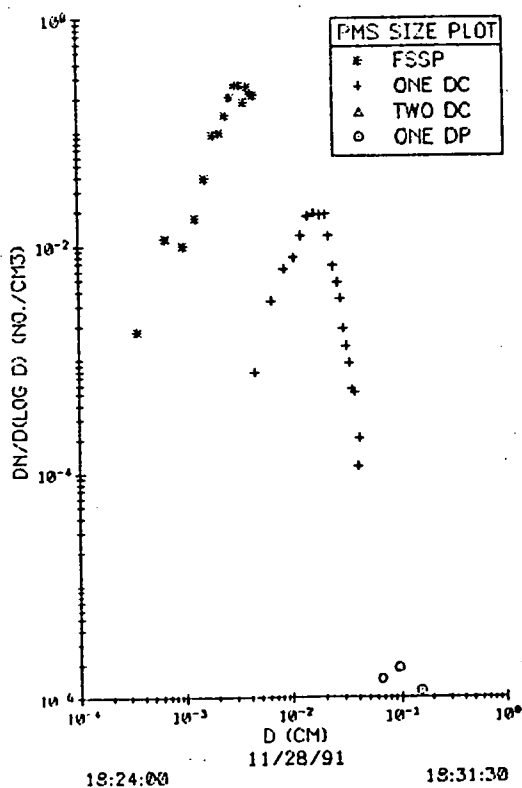
Wind Direction: 259.5 °

Wind Velocity: 40.36 m/sec

Pressure: 273.96 mb

Pressure Altitude: 9765.5 m

Aircraft Heading: 257.7 °



No 2-DC DATA

11/28/91

18:36:30-18:39:10

Leg # 11

Averages:

Temperature: -47.8 ° C

Dew Point: -50.3 ° C

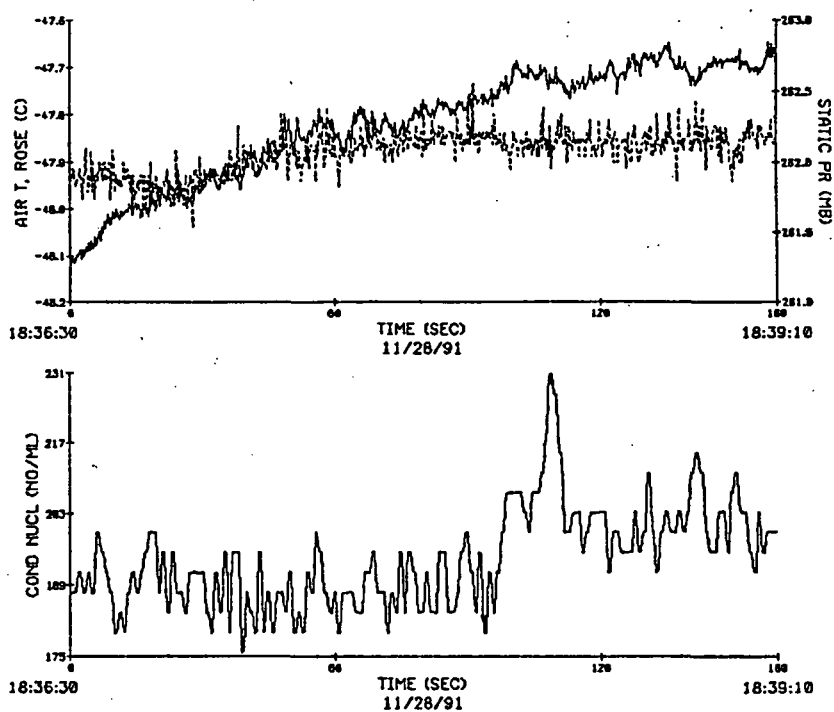
Wind Direction: 256.0 °

Wind Velocity: 36.89 m/sec

Pressure: 262.08 mb

Pressure Altitude: 10055.8 m

Aircraft Heading: 77.1 °



No 2-DC DATA

11/28/91

18:43:00-18:44:46

Leg # 12a

Averages:

Temperature: -47.8 ° C

Dew Point: -51.2 ° C

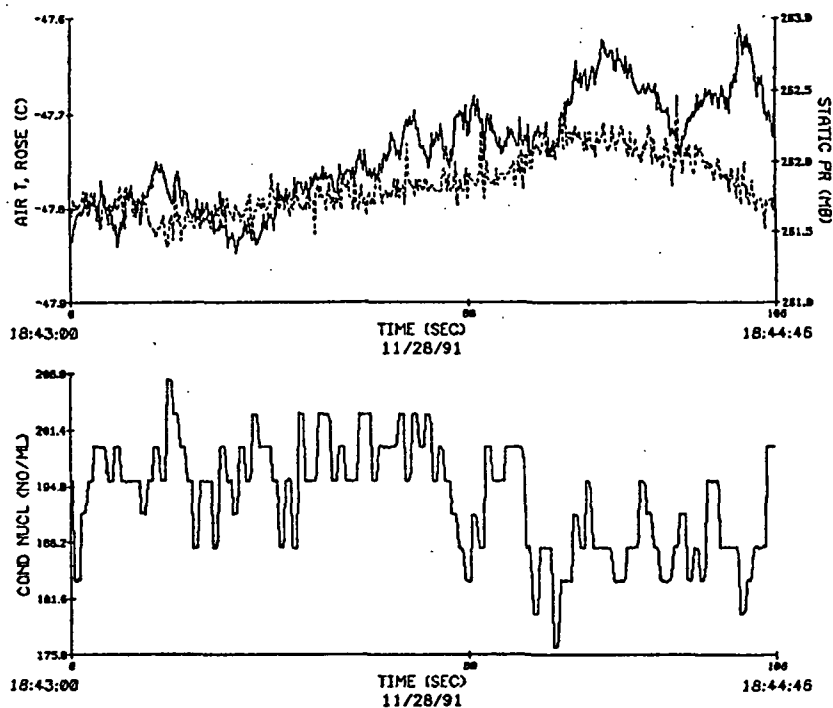
Wind Direction: 257.2 °

Wind Velocity: 38.22 m/sec

Pressure: 261.9 mb

Pressure Altitude: 10060.9 m

Aircraft Heading: 255.7 °

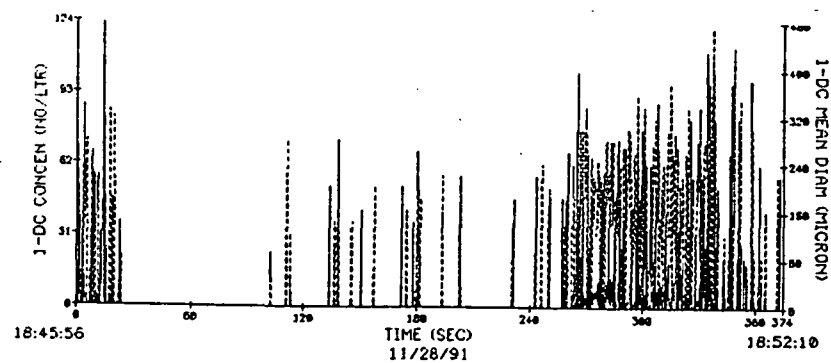
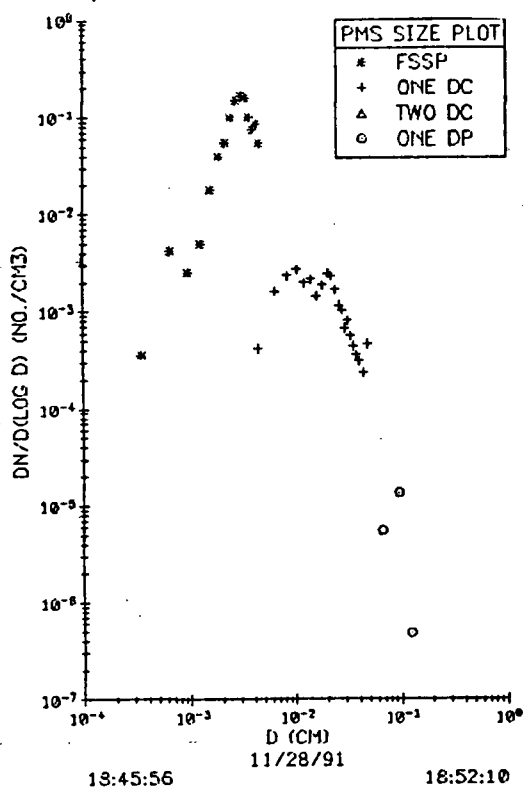
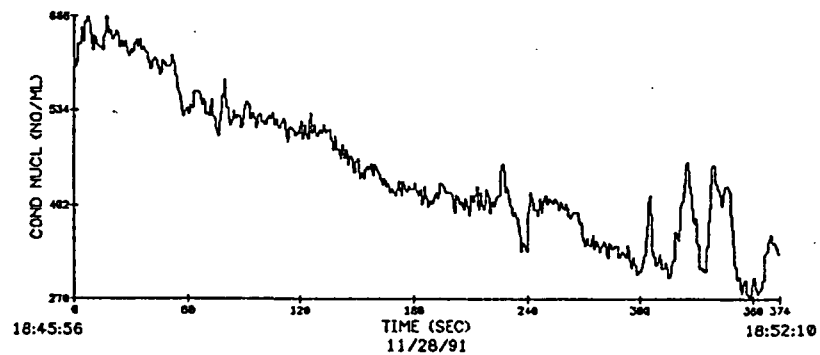
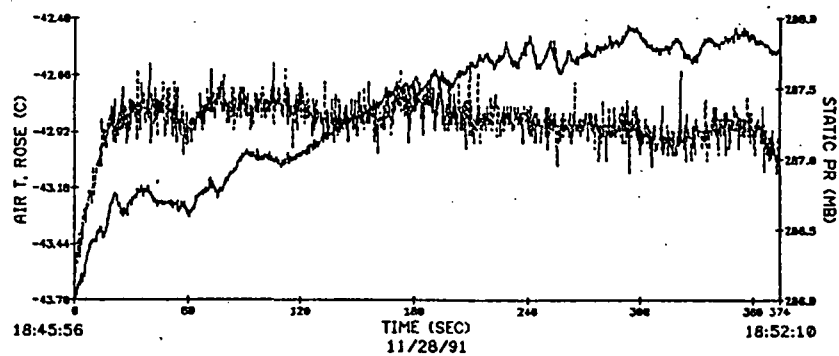


No 2-DC DATA

11/28/91

18:45:56-18:52:10

Leg # 12b

Averages:**Temperature:** -42.8 °C**Dew Point:** Not Available**Wind Direction:** 256.0 °**Wind Velocity:** 38.60 m/sec**Pressure:** 287.26 mb**Pressure Altitude:** 9452.2 m**Aircraft Heading:** 256.7 °**No 2-DC DATA**

11/28/91

18:55:30-18:59:00

Leg # 13

Averages:

Temperature: °C

Dew Point: °C

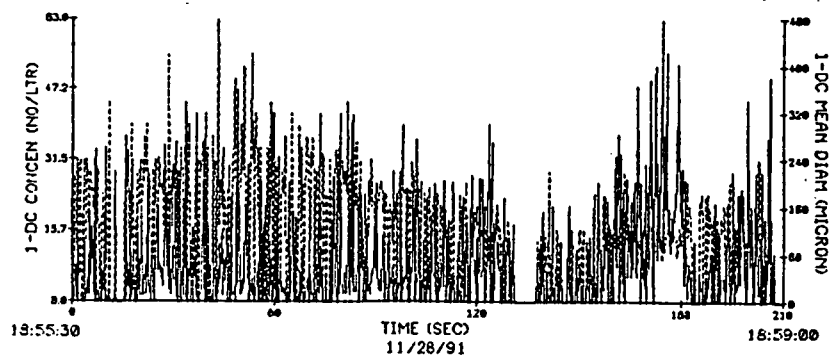
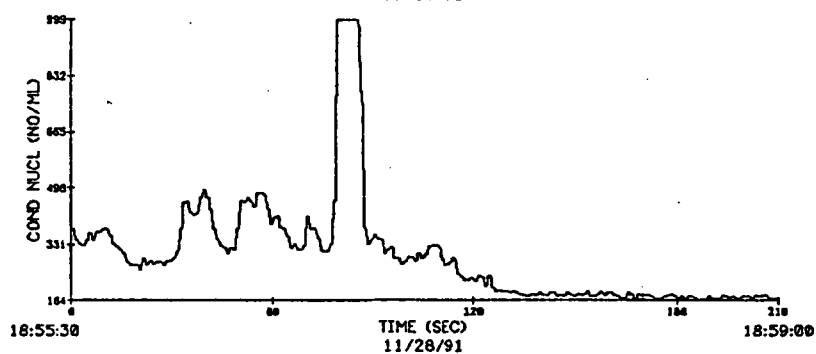
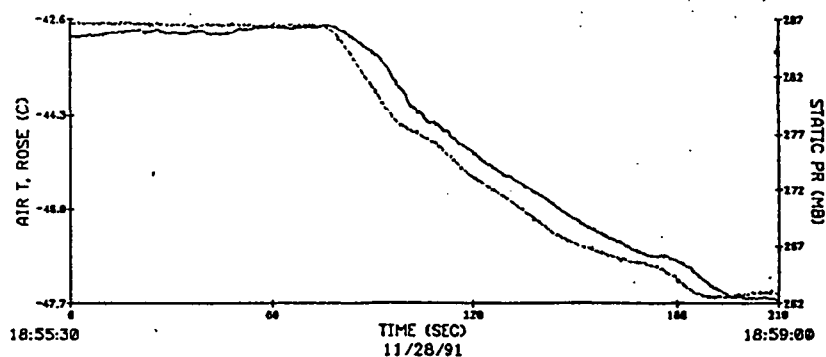
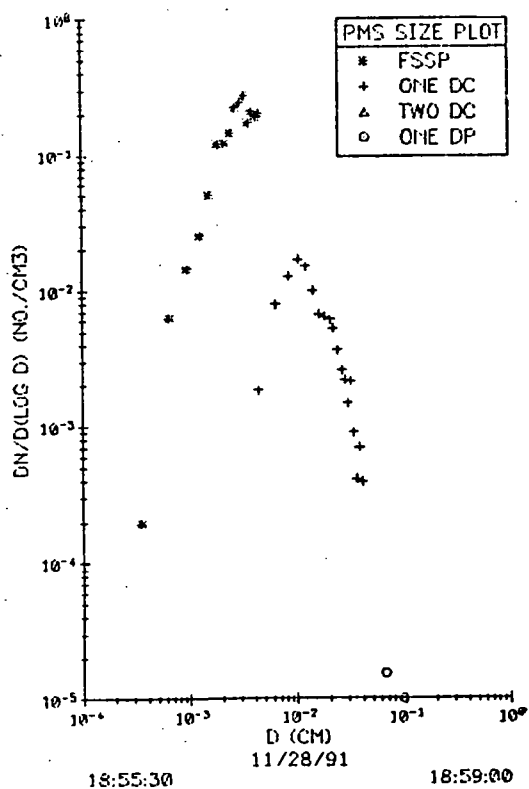
Wind Direction: °

Wind Velocity: m/sec

Pressure: mb

Pressure Altitude: m

Aircraft Heading: °

**No 2-DC DATA**

11/28/91

19:03:50-19:16:00

Leg # 14

Averages:

Temperature: -47.6 °C

Dew Point: -48.2 °C

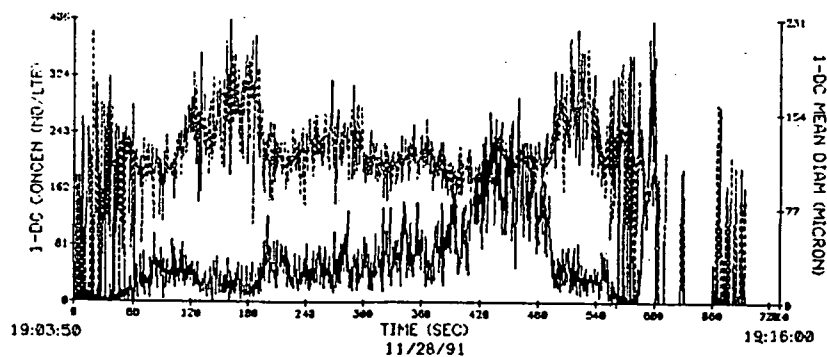
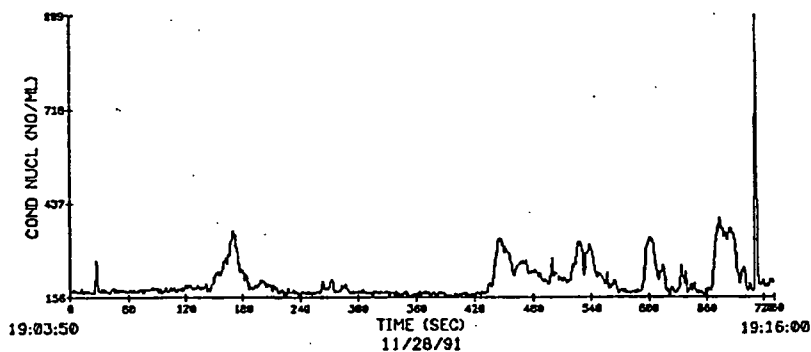
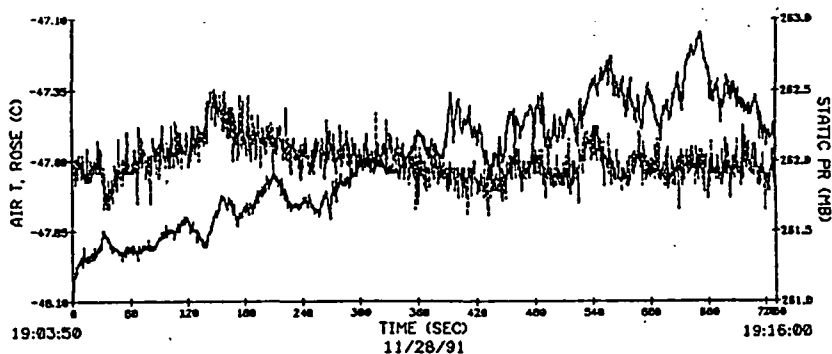
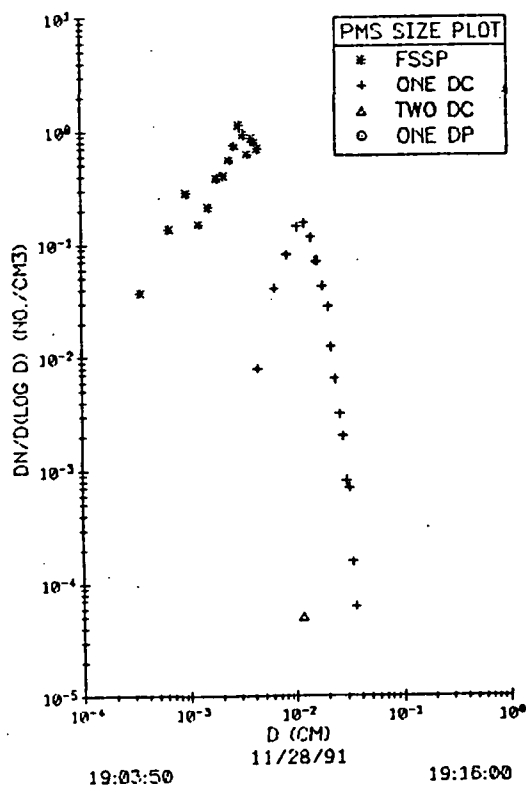
Wind Direction: 256.2 °

Wind Velocity: 38.47 m/sec

Pressure: 262.0 mb

Pressure Altitude: 10057.52 m

Aircraft Heading: 255.8 °

**No 2-DC DATA**

11/28/91

19:20:45-19:23:10

Leg # 15

Averages:

Temperature: -53.1 °C

Dew Point: Not Available

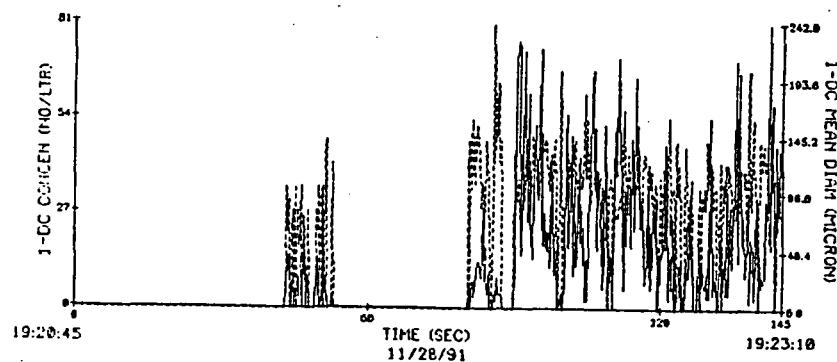
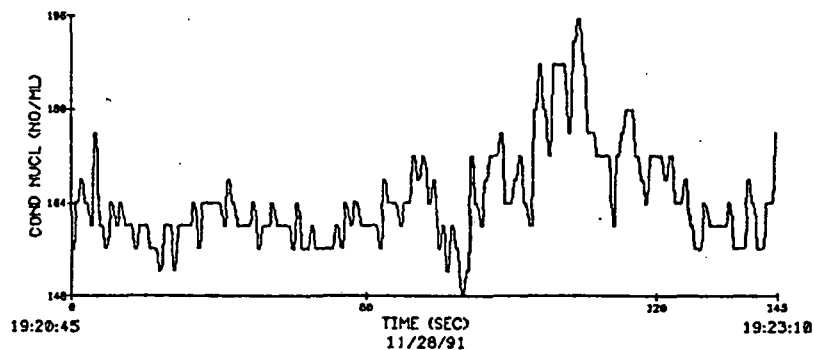
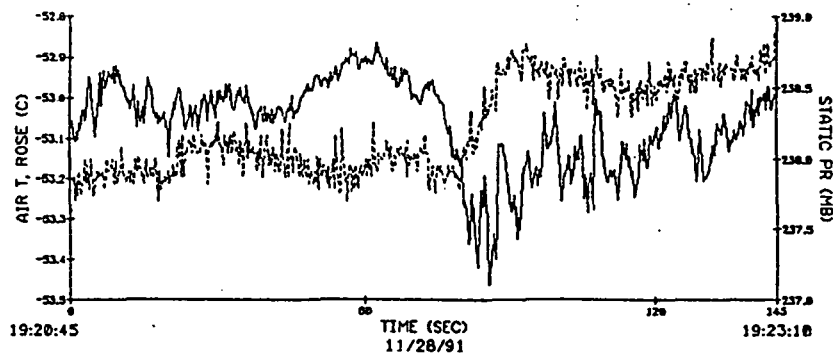
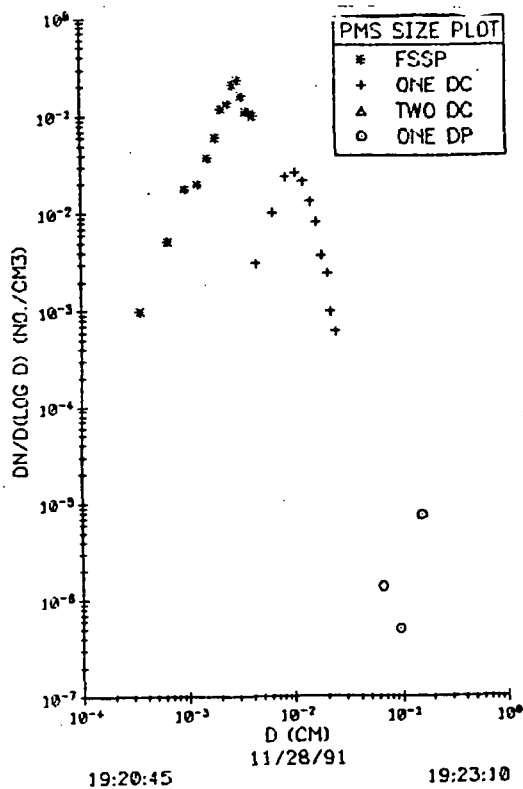
Wind Direction: 254.0 °

Wind Velocity: 40.99 m/sec

Pressure: 238.25 mb

Pressure Altitude: 10671.7 m

Aircraft Heading: 73.7 °



No 2-DC DATA

11/28/91

19:27:00-19:29:46

Leg # 16a

Averages:

Temperature: -52.8 °C

Dew Point: Not Available

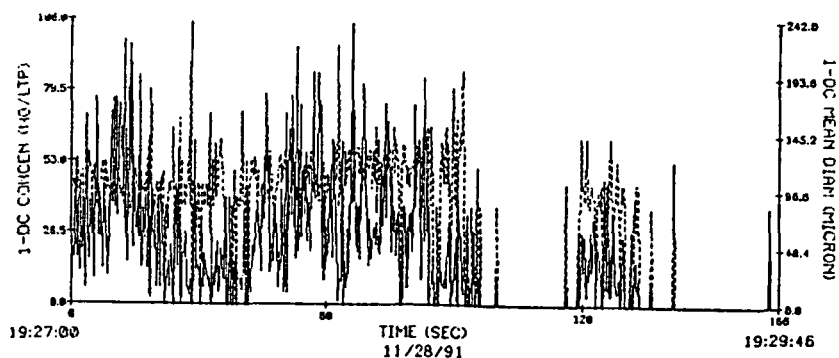
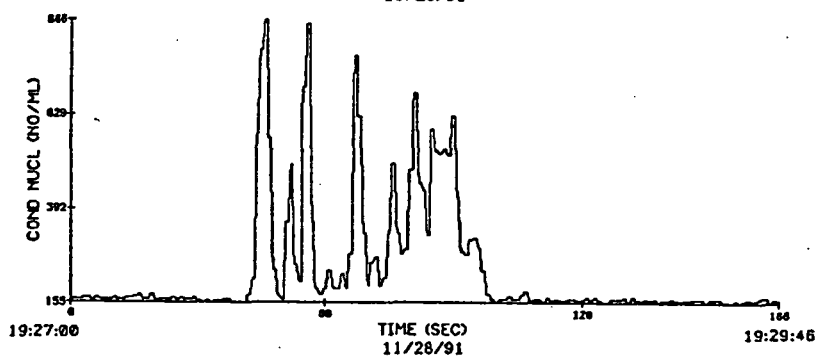
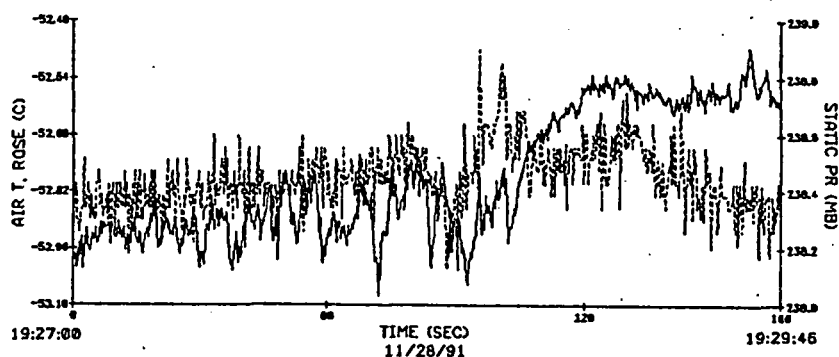
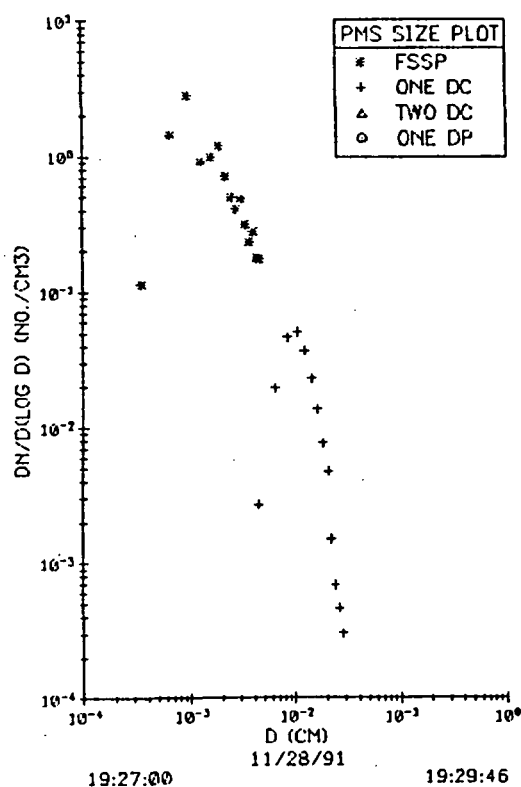
Wind Direction: 256.1 °

Wind Velocity: 44.10 m/sec

Pressure: 238.45 mb

Pressure Altitude: 10666.4 m

Aircraft Heading: 256.1 °



No 2-DC DATA

11/28/91

19:31:26-19:36:00

Leg # 16b

Averages:

Temperature: -55.7 °C

Dew Point: Not Available

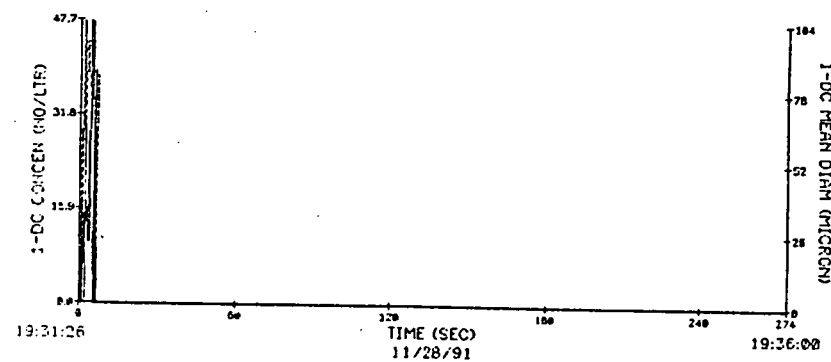
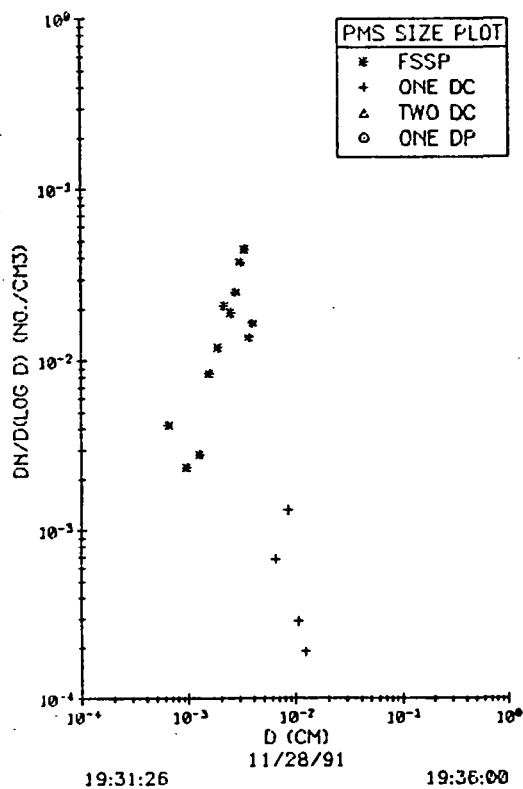
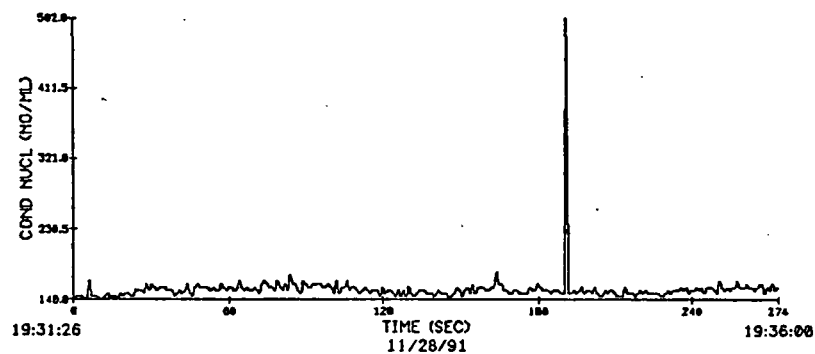
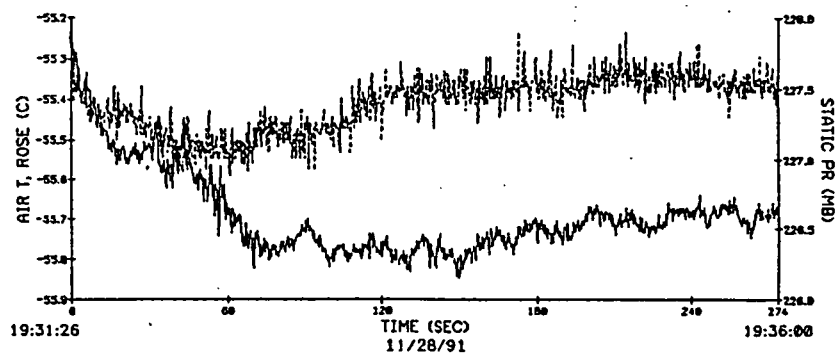
Wind Direction: 256.0 °

Wind Velocity: 44.39 m/sec

Pressure: 227.41 mb

Pressure Altitude: 10968.6 m

Aircraft Heading: 256.3 °



No 2-DC DATA

11/28/91

20:00:00-20:11:20

Leg # 17

Averages:

Temperature: -58.9 °C

Dew Point: Not Available

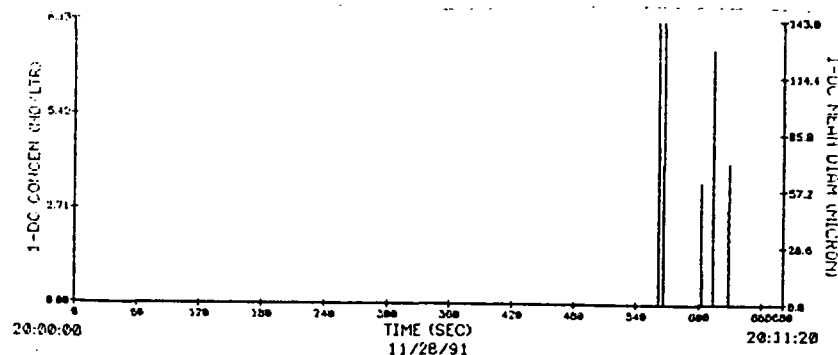
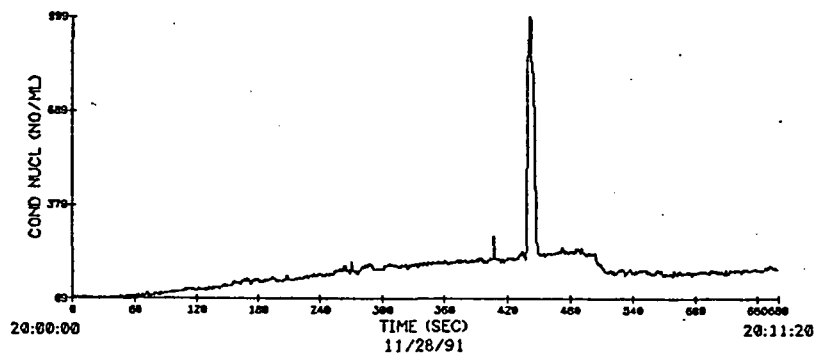
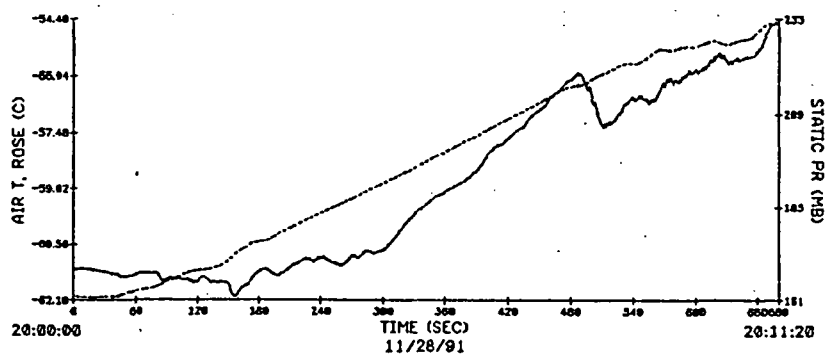
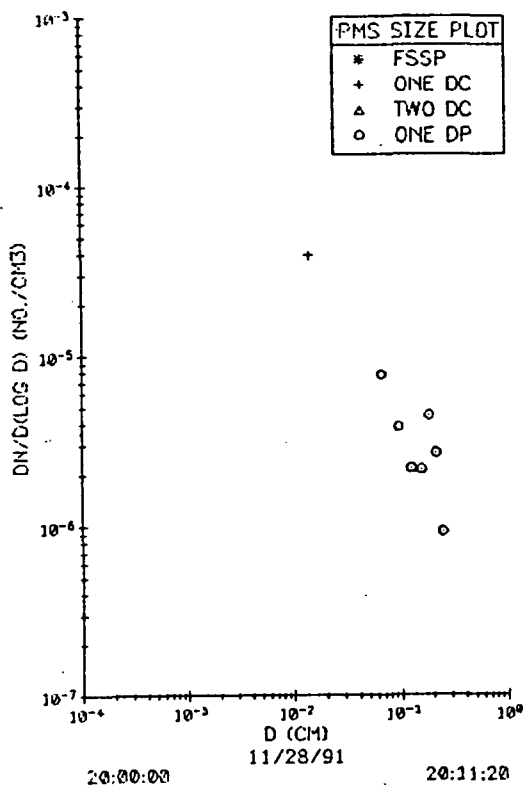
Wind Direction: 257.3 °

Wind Velocity: 43.48 m/sec

Pressure: 197.03 mb

Pressure Altitude: 11901.3 m

Aircraft Heading: 211.3 °

**No 2-DC DATA**

11/28/91

20:15:00-20:17:46

Leg # 18a

Averages:

Temperature: -53.9 °C

Dew Point: Not Available

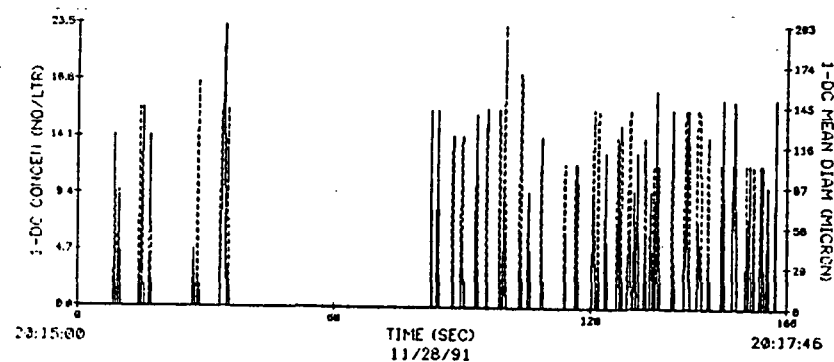
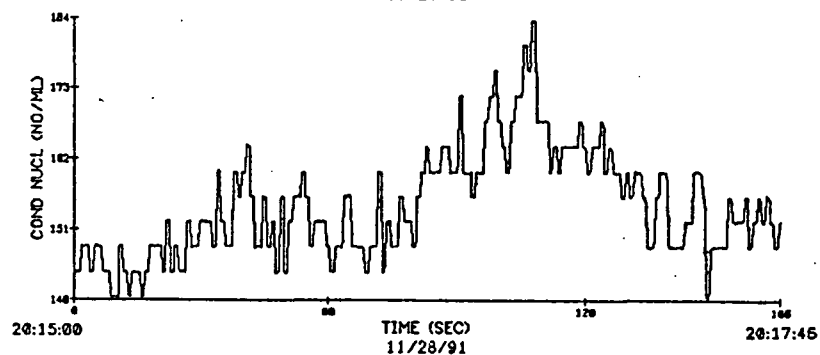
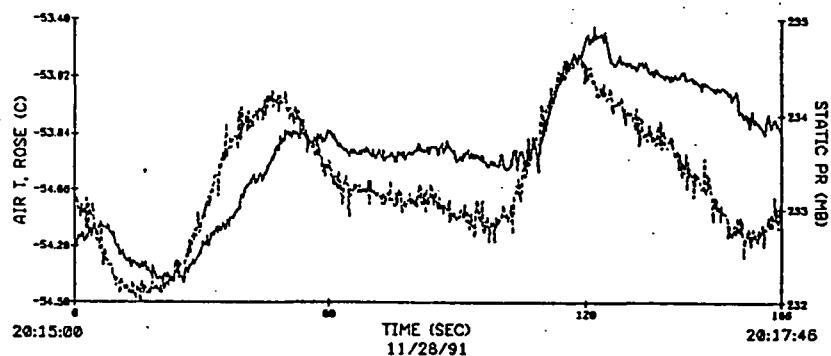
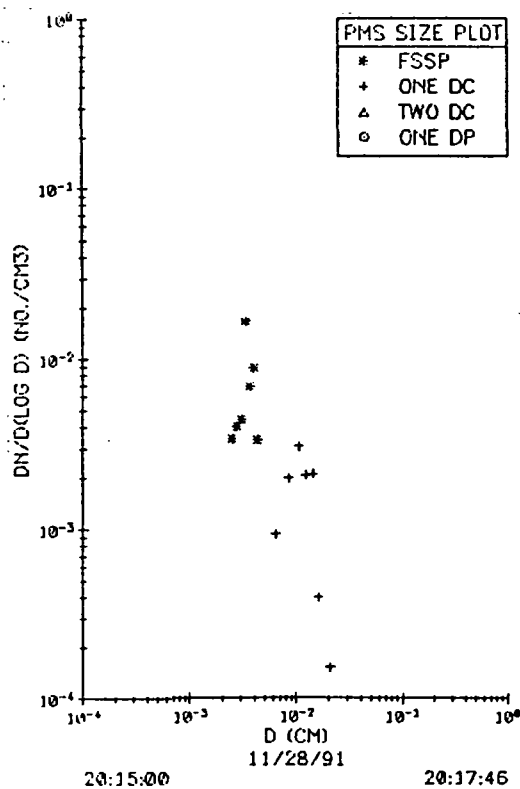
Wind Direction: 251.1 °

Wind Velocity: 42.43 m/sec

Pressure: 233.30 mb

Pressure Altitude: 10805.8 m

Aircraft Heading: 238.2 °

**No 2-DC DATA**

11/28/91

20:18:36-20:20:30

Leg # 18b

Averages:

Temperature: -52.7 °C

Dew Point: Not Available

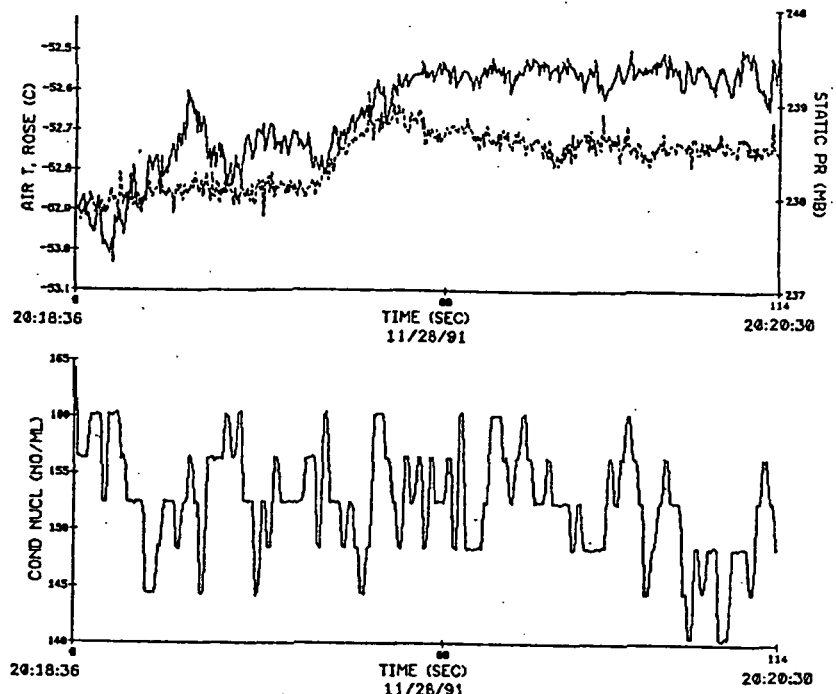
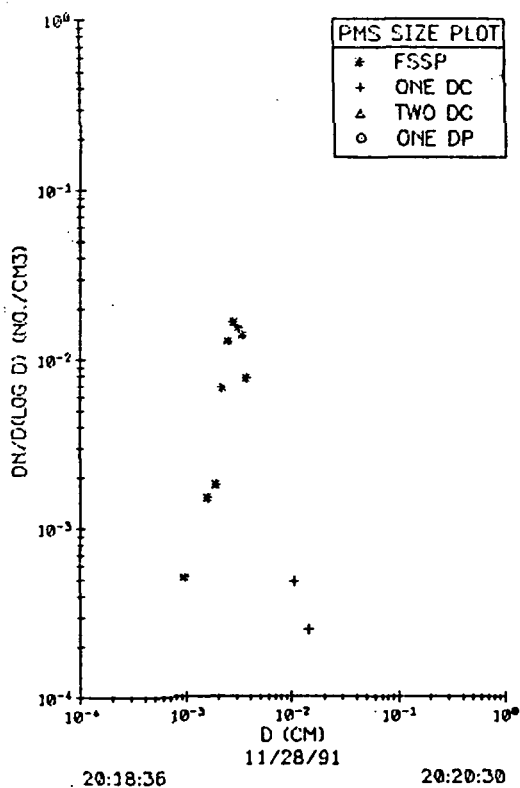
Wind Direction: 251.5 °

Wind Velocity: 41.05 m/sec

Pressure: 238.41 mb

Pressure Altitude: 10667.4 m

Aircraft Heading: 255.2 °



No 2-DC DATA

11/28/91

20:24:15-20:26:35

Leg # 19

Averages:

Temperature: -47.2 °C

Dew Point: -47.8 °C

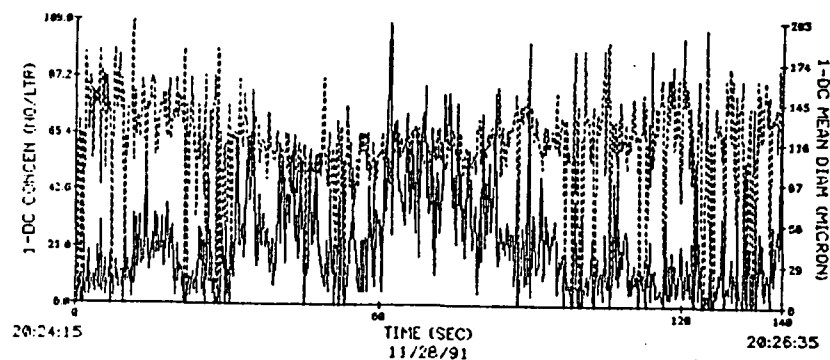
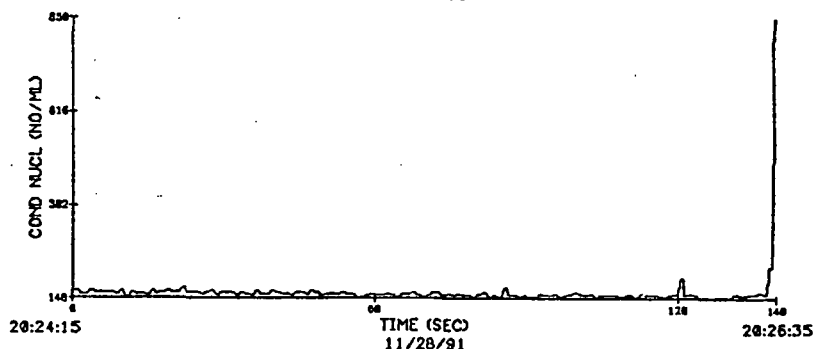
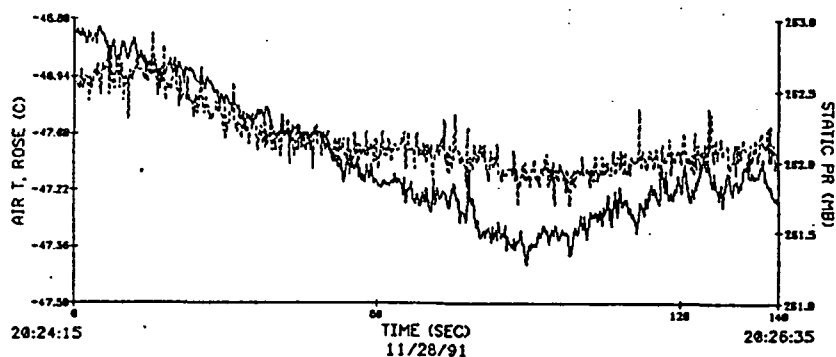
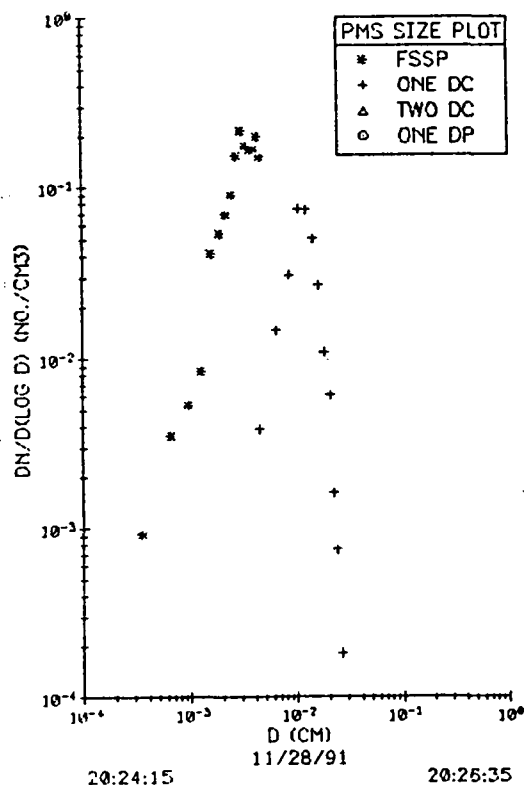
Wind Direction: 252.2 °

Wind Velocity: 36.33 m/sec

Pressure: 262.15 mb

Pressure Altitude: 10054.1 m

Aircraft Heading: 69.8 °



No 2-DC DATA

11/28/91

20:30:00-20:30:59

Leg # 20a

Averages:

Temperature: -47.2 °C

Dew Point: -47.6 °C

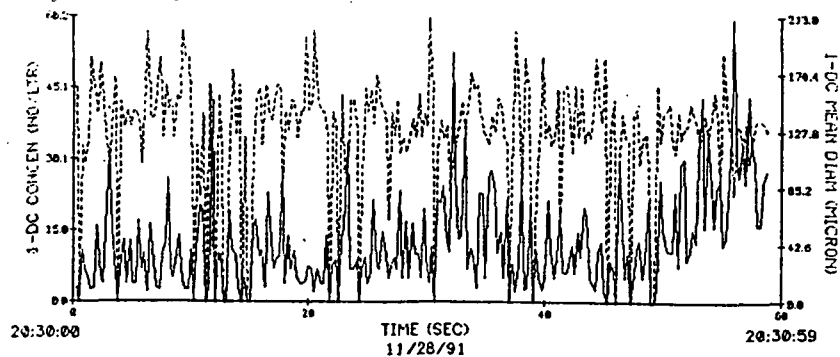
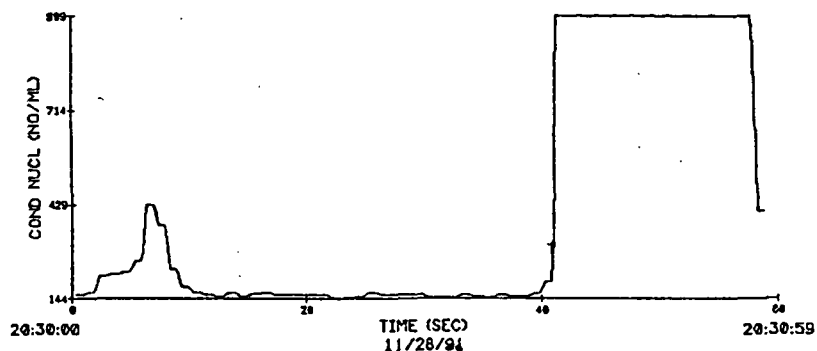
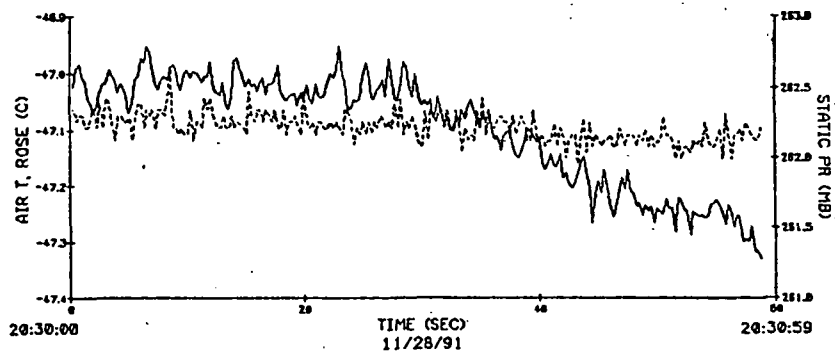
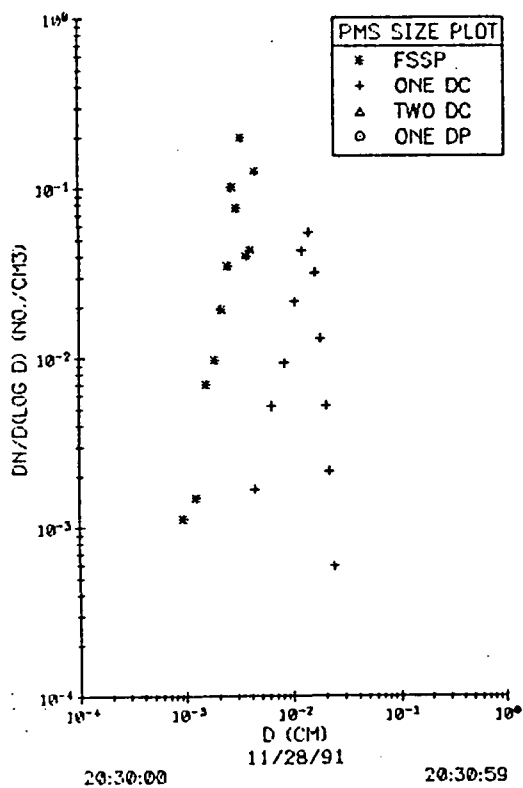
Wind Direction: 252.1 °

Wind Velocity: 38.15 m/sec

Pressure: 262.43 mb

Pressure Altitude: 10047.1 m

Aircraft Heading: 250.3 °

**No 2-DC DATA**

11/28/91

20:32:39-20:36:00

Leg # 20b

Averages:

Temperature: -42.5 °C

Dew Point: Not Available

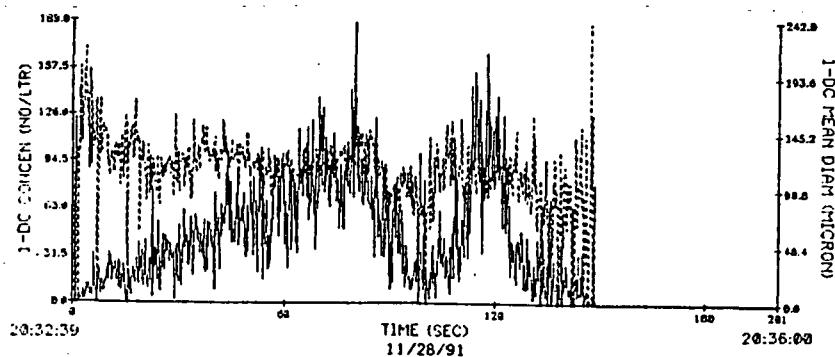
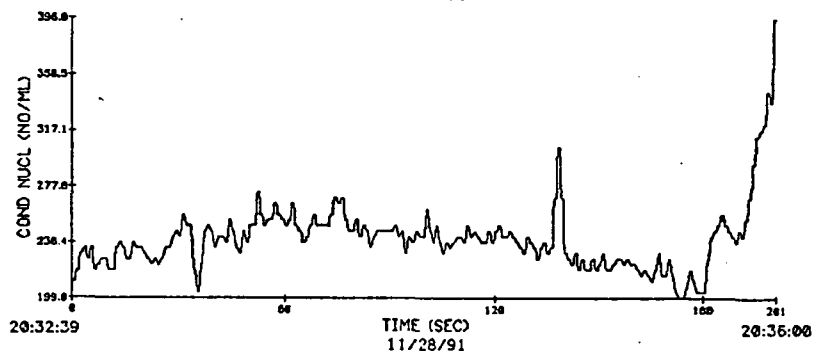
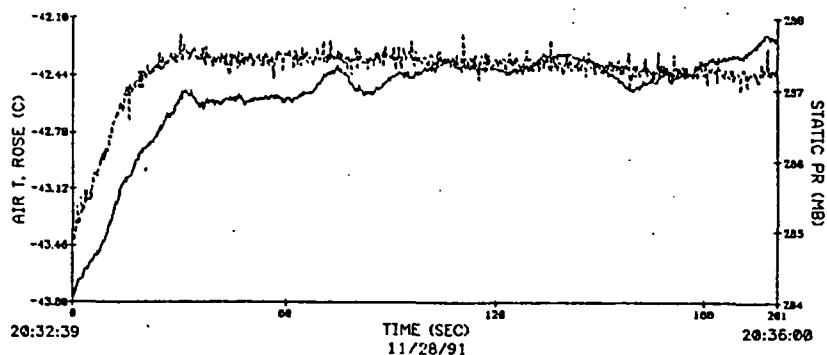
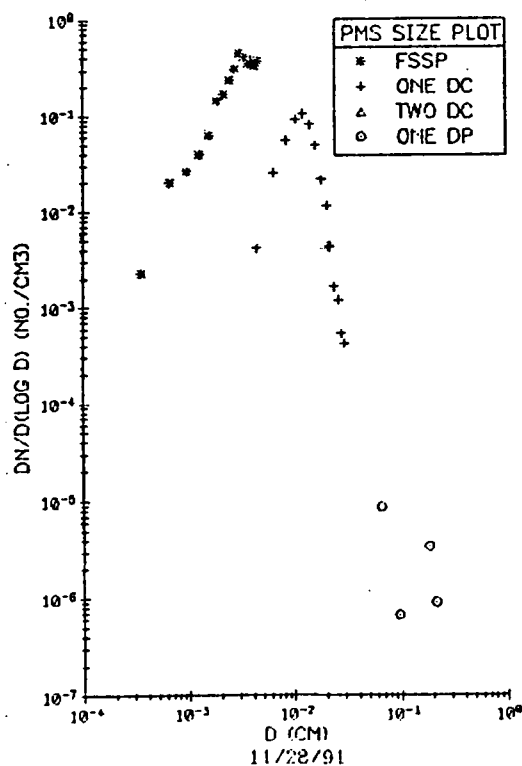
Wind Direction: 253.9 °

Wind Velocity: 38.71 m/sec

Pressure: 287.28 mb

Pressure Altitude: 9452.0 m

Aircraft Heading: 255.4 °



No 2-DC DATA

11/28/91

20:41:00-20:44:25

Leg # 21

Averages:

Temperature: -47.3 °C

Dew Point: -49.5 °C

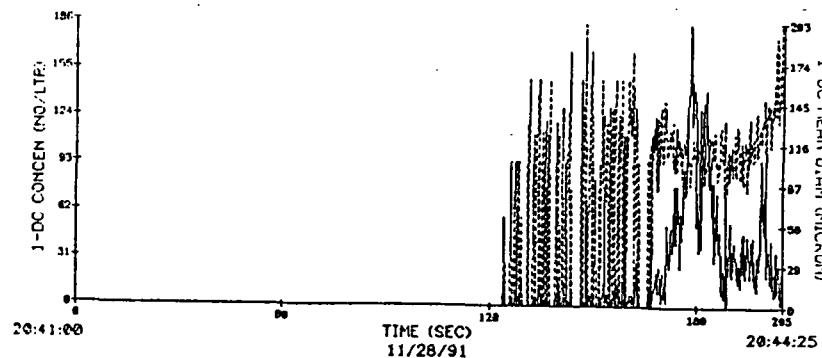
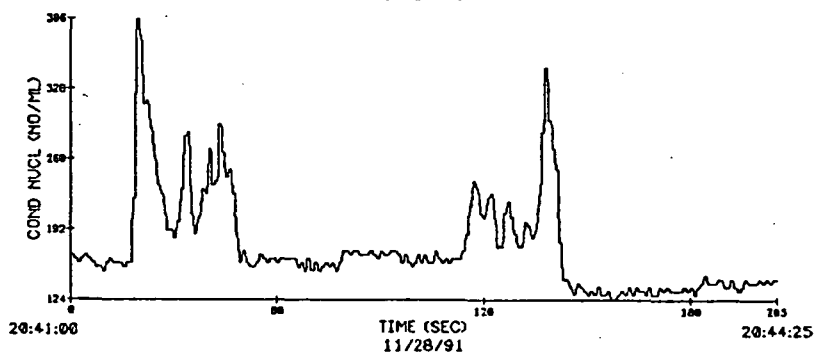
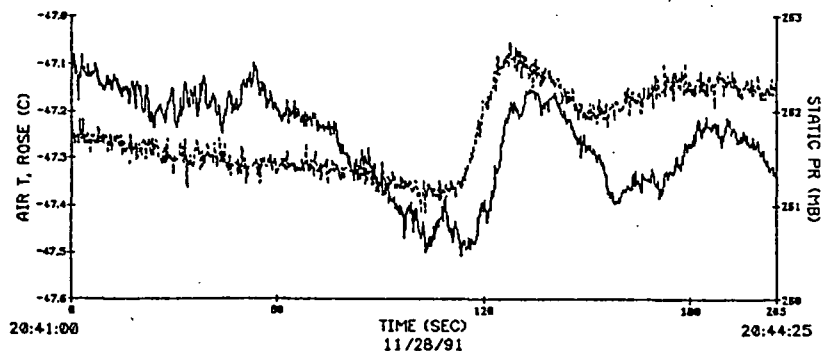
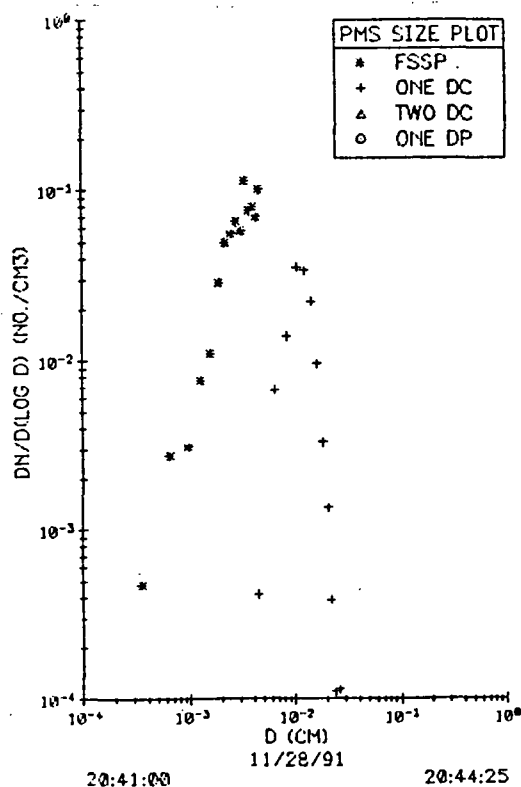
Wind Direction: 252.0 °

Wind Velocity: 38.11 m/sec

Pressure: 261.79 mb

Pressure Altitude: 10063.1 m

Aircraft Heading: 76.7 °



No 2-DC DATA

11/28/91

20:50:50-21:00:00

Leg # 22

Averages:

Temperature: -47.0 °C

Dew Point: -48.8 °C

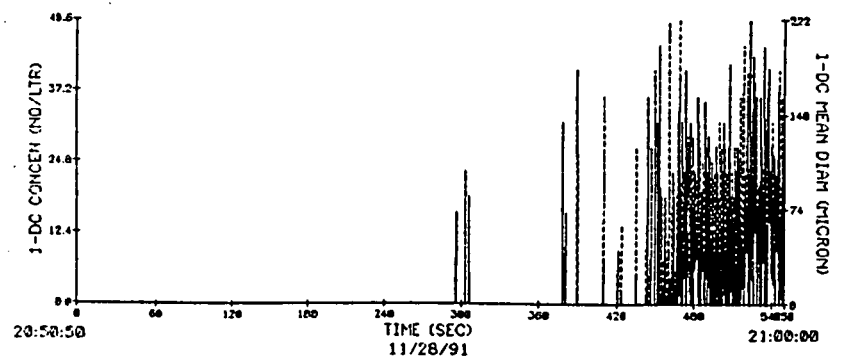
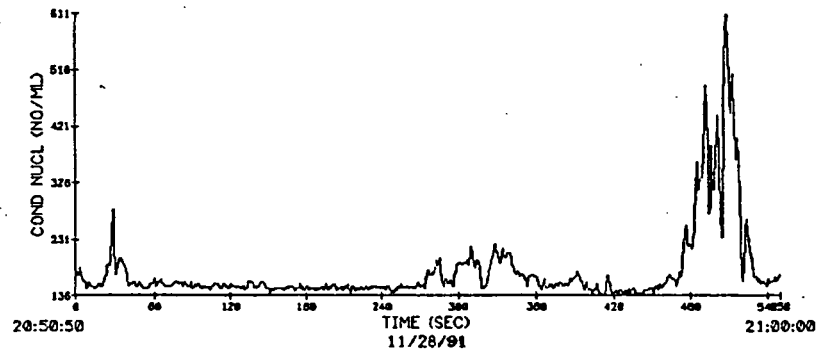
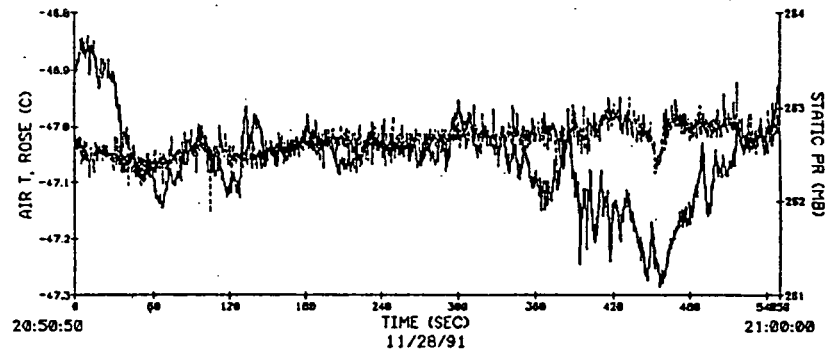
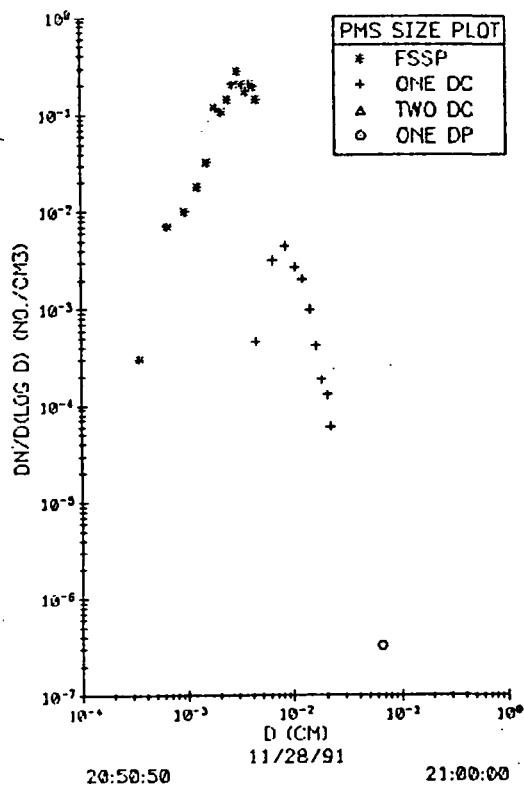
Wind Direction: 252.0 °

Wind Velocity: 40.35 m/sec

Pressure: 262.65 mb

Pressure Altitude: 10041.6 m

Aircraft Heading: 254.7 °



No 2-DC DATA

11/30/91

15:49:30-15:52:00

Leg # 1

Averages:

Temperature: -49.7 °C

Dew Point: -50.9 °C

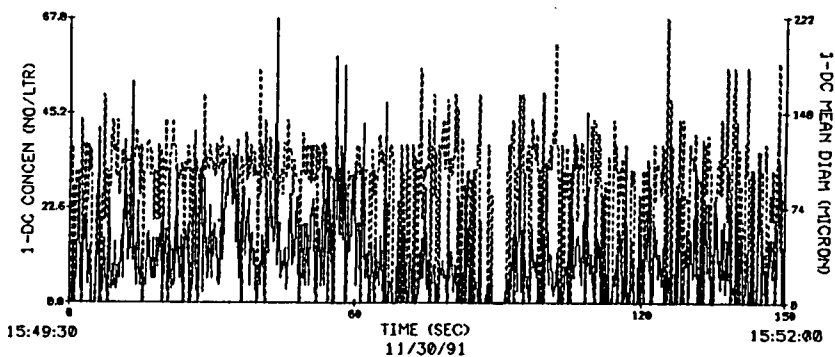
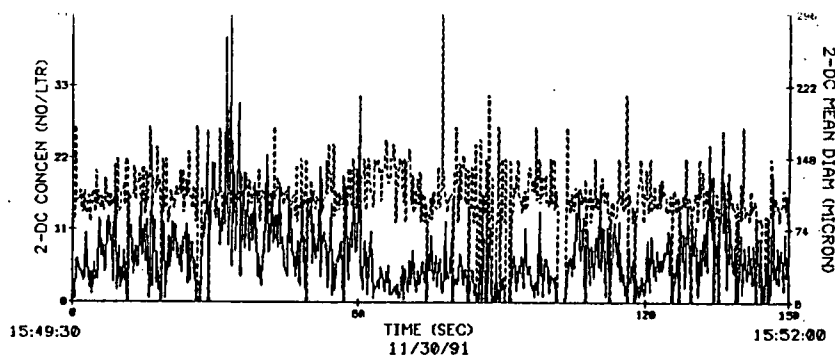
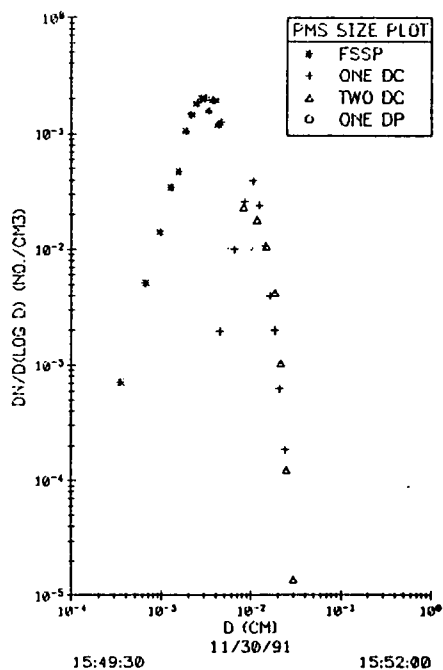
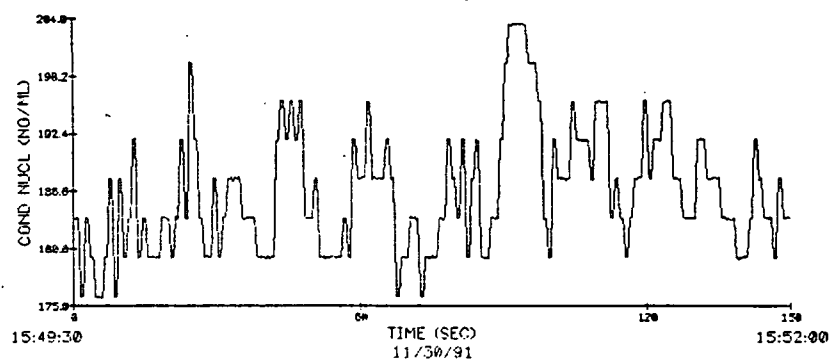
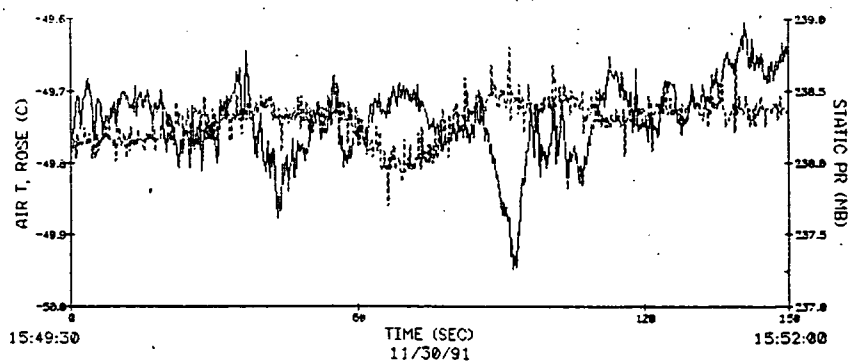
Wind Direction: 236.5 °

Wind Velocity: 71.42 m/sec

Pressure: 238.30 mb

Pressure Altitude: 10670.3 m

Aircraft Heading: 226.1 °



11/30/91 15:51:22.5344 15:51:23.9448 DeltaT: 0: 1.4104 TAS1 = 138.8 TAS2 = 138.7

11/30/91

15:59:00-16:03:30

Leg # 2

Averages:

Temperature: -51.8 °C

Dew Point: -52.3 °C

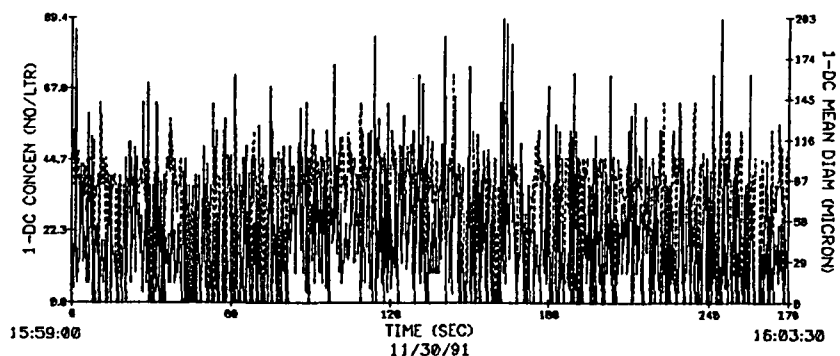
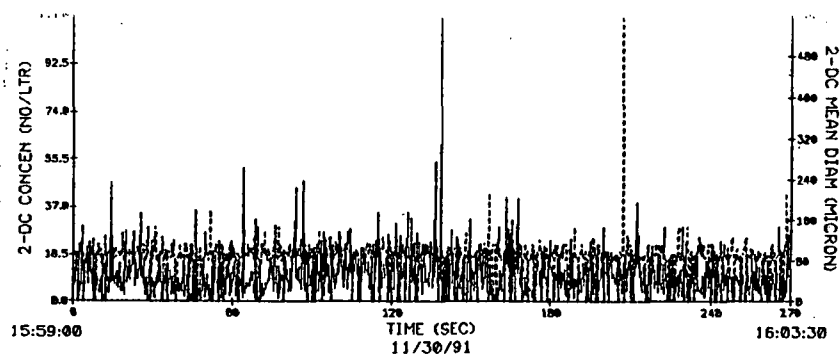
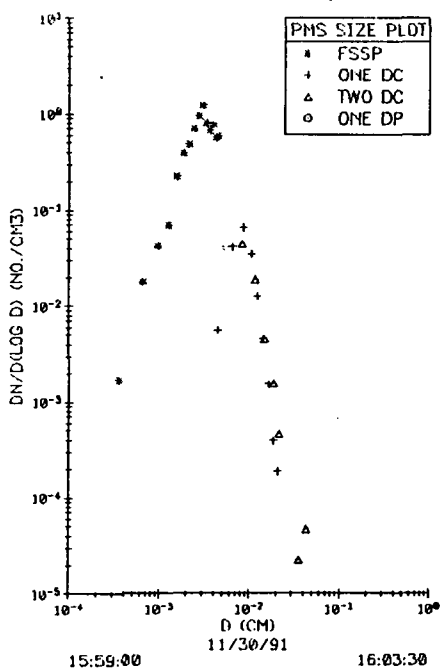
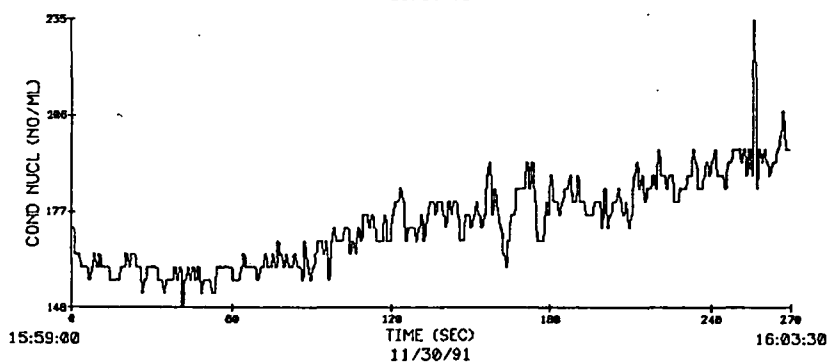
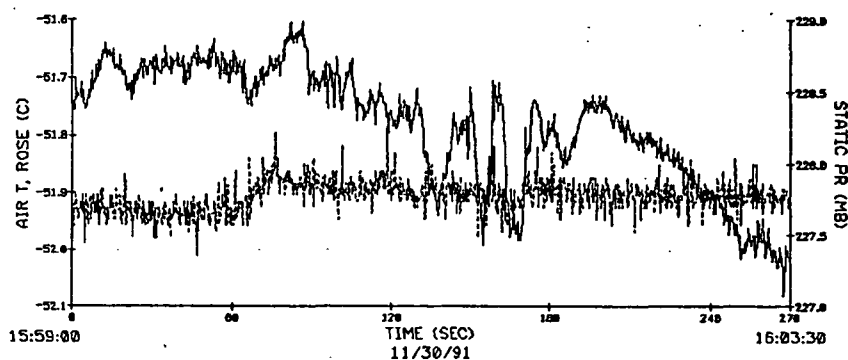
Wind Direction: 235.6 °

Wind Velocity: 70.60 m/sec

Pressure: 227.78 mb

Pressure Altitude: 10958.2 m

Aircraft Heading: 234.9 °



11/30/91

16:01:55.1767

16:01:55.6169

DeltaT: 0: 0.4402

TAS1 = 133.6

TAS2 = 133.6

1 mm

11/30/91

16:07:30-16:10:45

Leg # 3

Averages:

Temperature: -54.6 ° C

Dew Point: -54.4 ° C

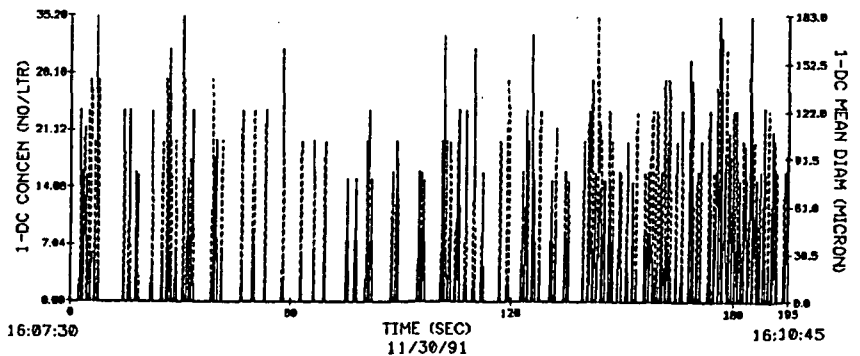
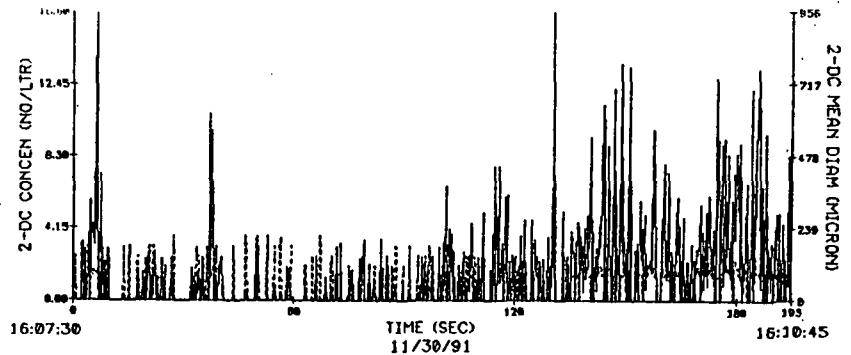
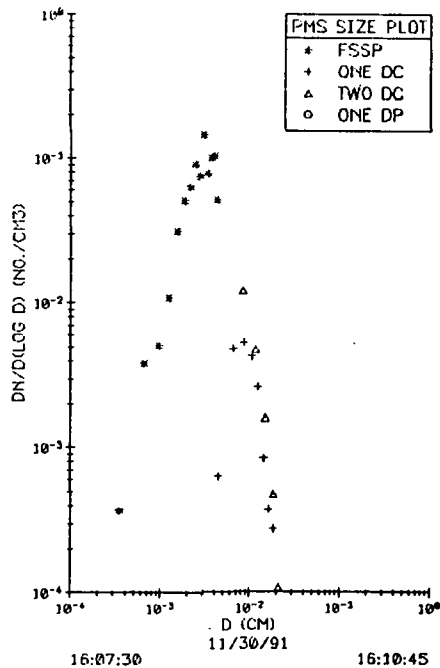
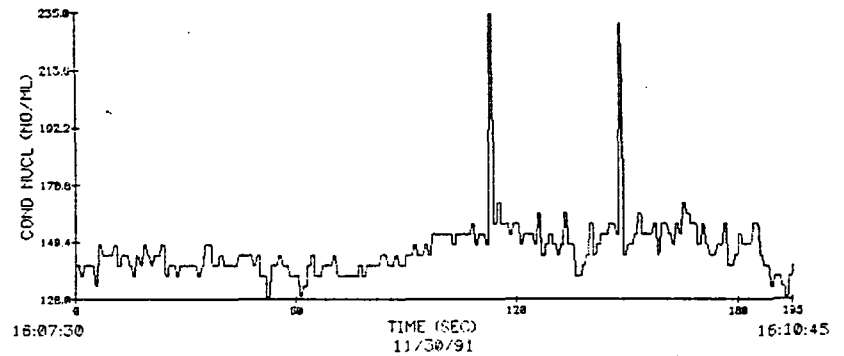
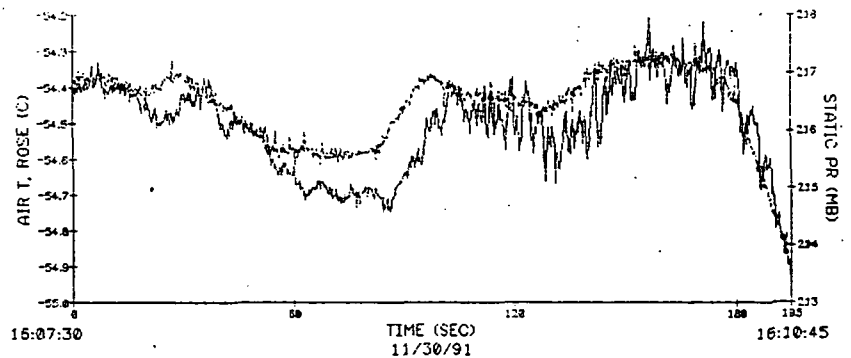
Wind Direction: 237.9 °

Wind Velocity: 74.65 m/sec

Pressure: 216.21 mb

Pressure Altitude: 11287.5 m

Aircraft Heading: 236.6 °



11/30/91 16:10:24.1193 16:10:25.8604 DeltaT: 0: 1.7411 TAS1 = 139.8 TAS2 = 139.8

1 mm

11/30/91

16:14:00-16:16:30

Leg # 4

Averages:

Temperature: -57.2 °C

Dew Point: Not Available

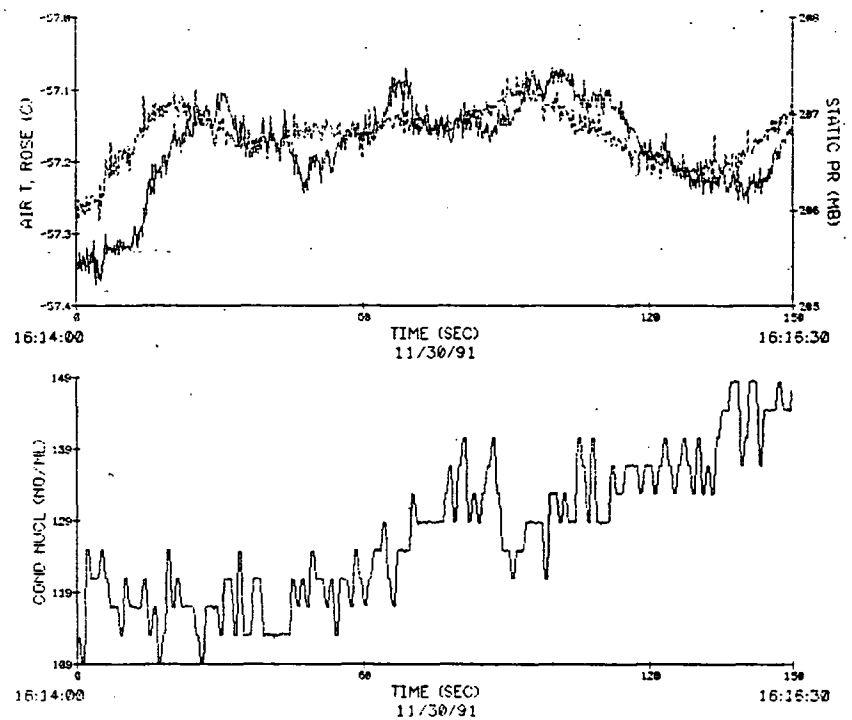
Wind Direction: 239.3 °

Wind Velocity: 78.47 m/sec

Pressure: 206.83 mb

Pressure Altitude: 11565.0 m

Aircraft Heading: 240.5 °



No Cloud

11/30/91

16:27:00-16:30:00

Leg # 5

Averages:

Temperature: -52.8 °C

Dew Point: -53.6 °C

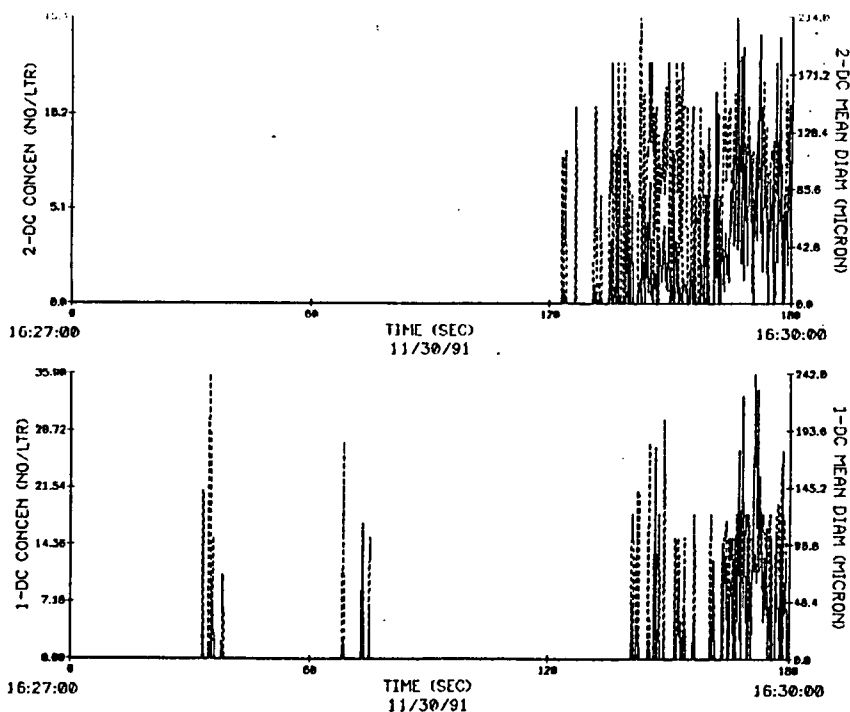
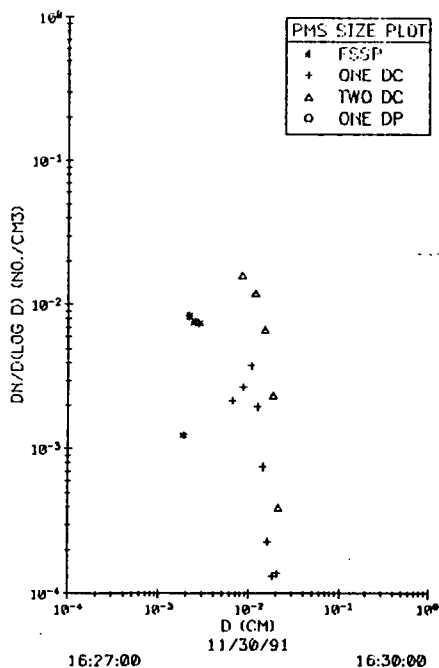
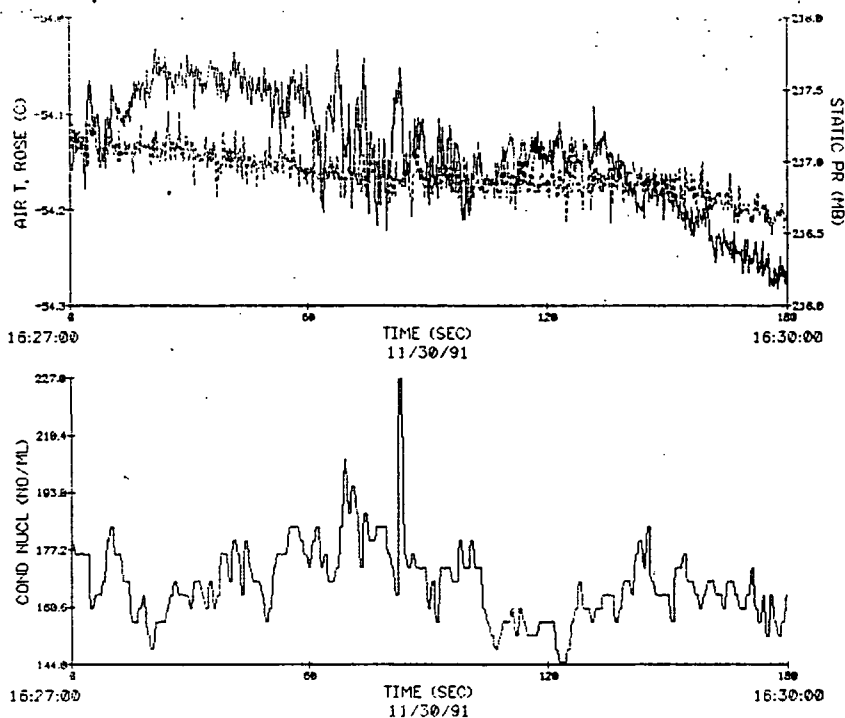
Wind Direction: 237.1 °

Wind Velocity: 73.18 m/sec

Pressure: 225.29 mb

Pressure Altitude: 11033.7 m

Aircraft Heading: 236.4 °



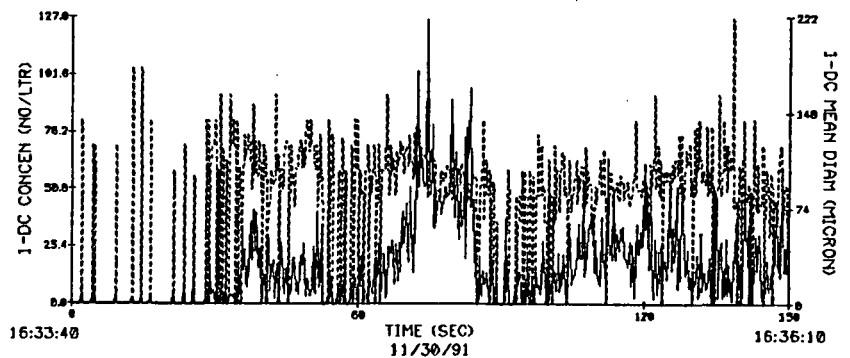
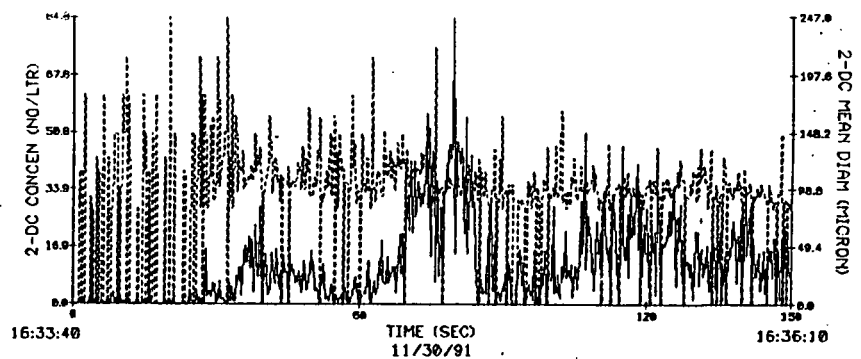
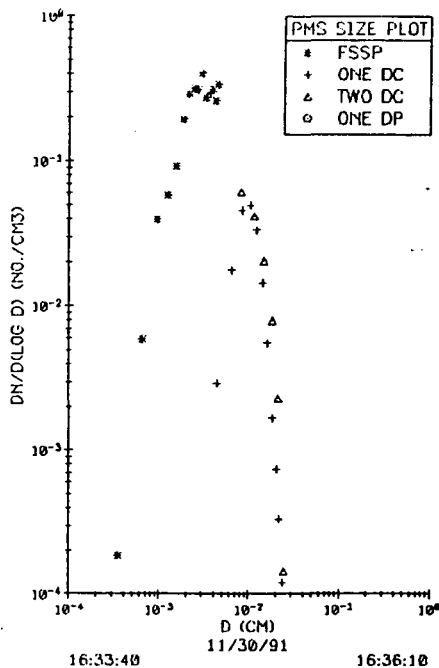
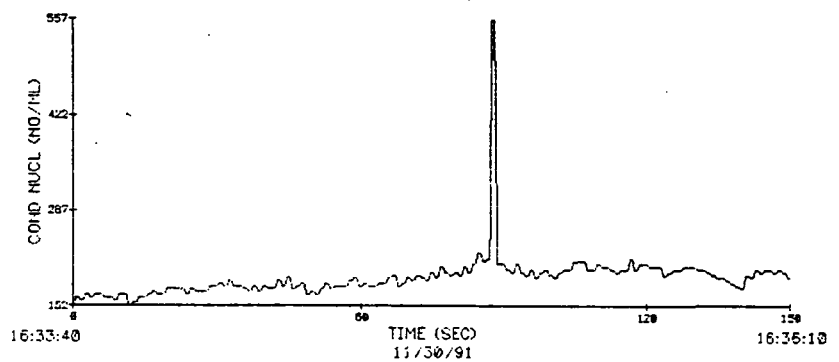
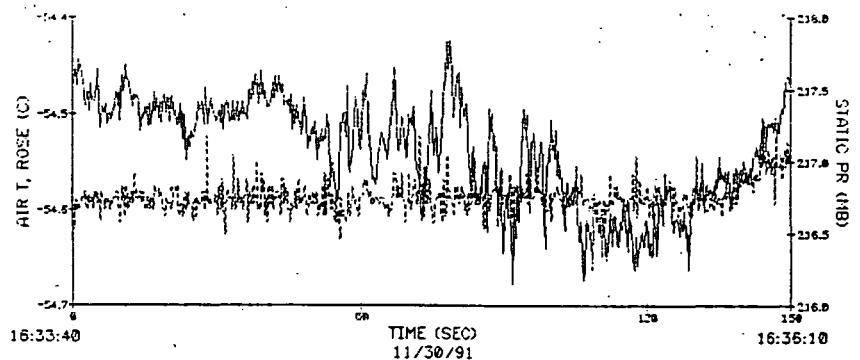
11/30/91 16:29:58.0649 16:30:00.9007 DeltaT: 0: 2.8358 TAS1 = 126.7 TAS2 = 126.9

1 mm

11/30/91

16:33:40-16:36:10

Leg # 6

Averages:**Temperature:** -54.5 °C**Dew Point:** Not Available**Wind Direction:** 238.1 °**Wind Velocity:** 75.73 m/sec**Pressure:** 216.75 mb**Pressure Altitude:** 11271.8 m**Aircraft Heading:** 243.7 °

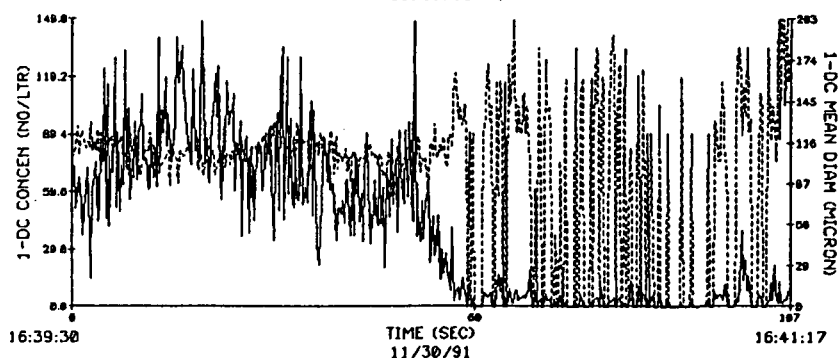
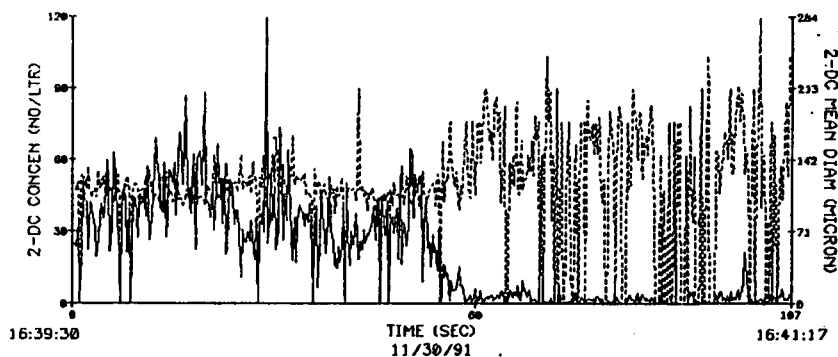
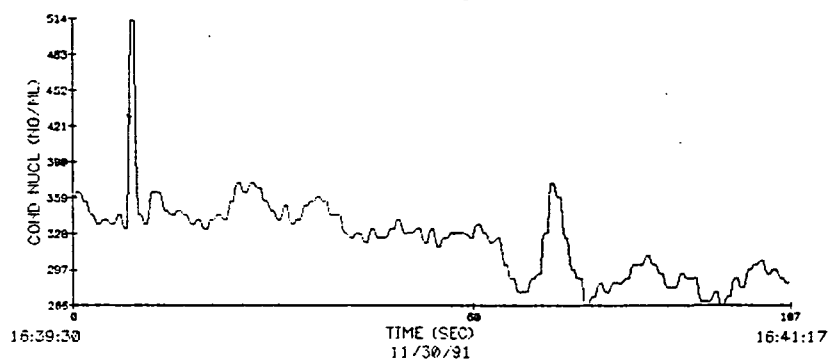
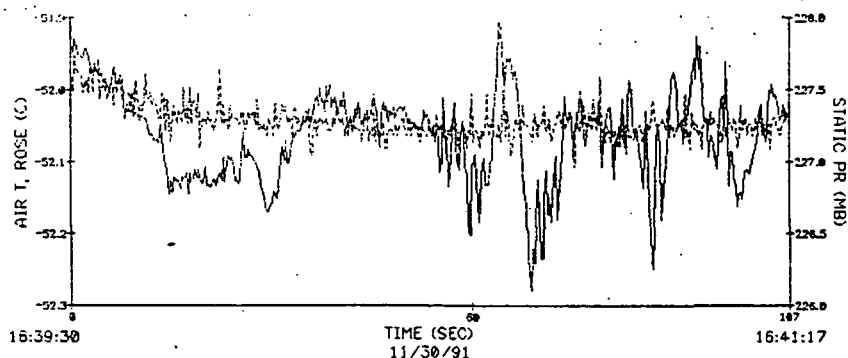
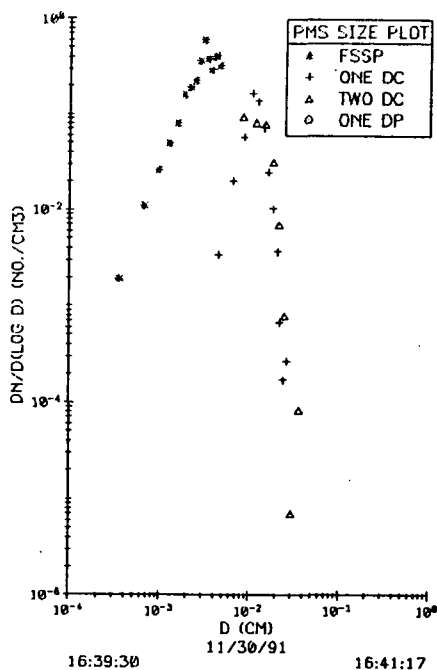
11/30/91 16:34:08.4620 16:34:13.1218 DeltaT: 0: 4.6598 TAS1 = 141.2 TAS2 = 141.3

1 mm

11/30/91

16:39:30-16:41:17

Leg # 7a

Averages:**Temperature: -52.1 °C****Dew Point: Not Available****Wind Direction: 236.5 °****Wind Velocity: 72.93 m/sec****Pressure: 227.35 mb****Pressure Altitude: 10970.2 m****Aircraft Heading: 241.3 °**

11/30/91 16:40:03.5115 16:40:03.7517 DeltaT: 0: 0.2402 TAS1 = 137.6 TAS2 = 137.6

1 mm

11/30/91

16:42:17-16:43:15

Leg # 7b

Averages:

Temperature: -50.5 °C

Dew Point: Not Available

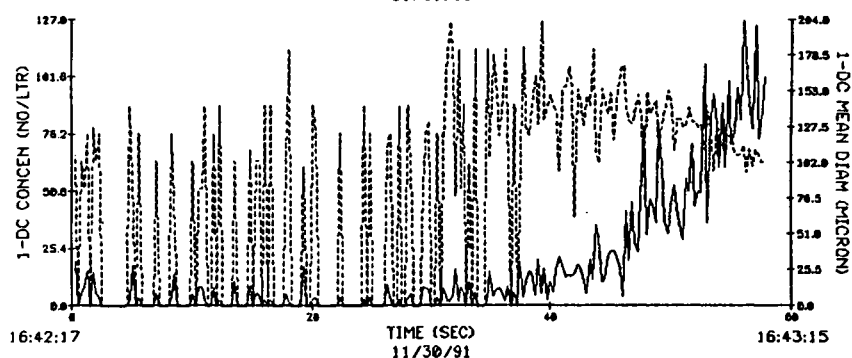
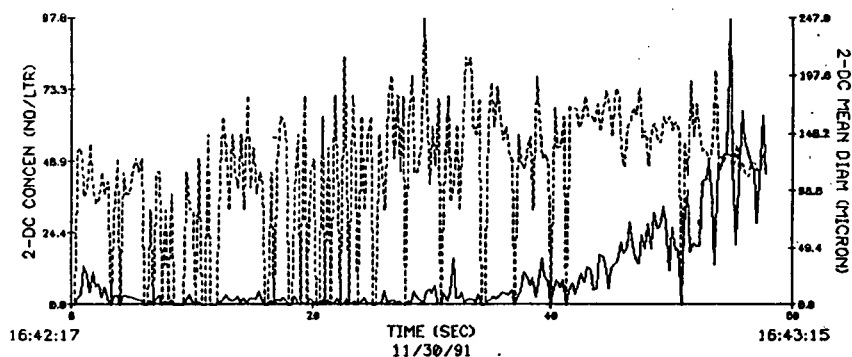
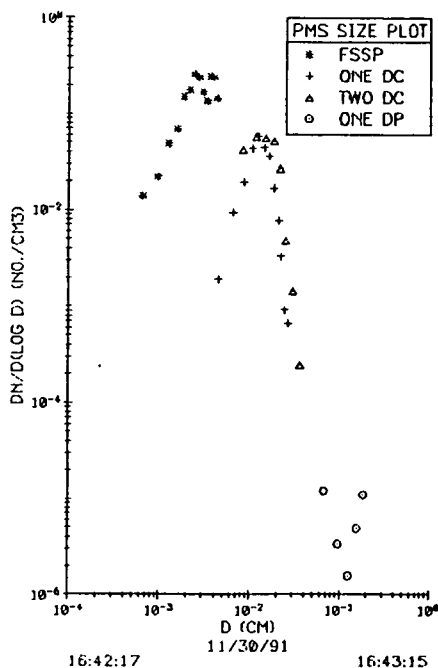
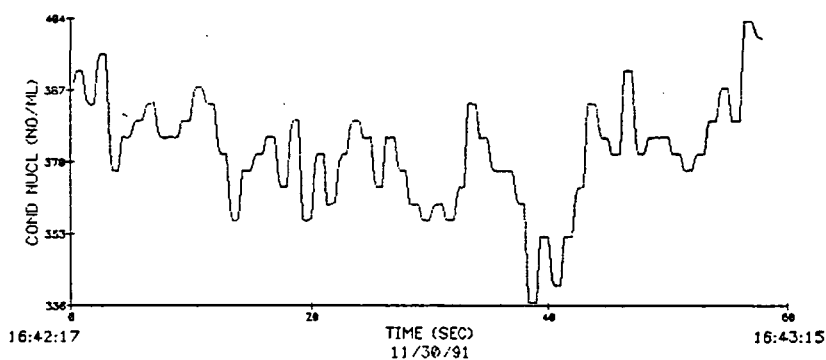
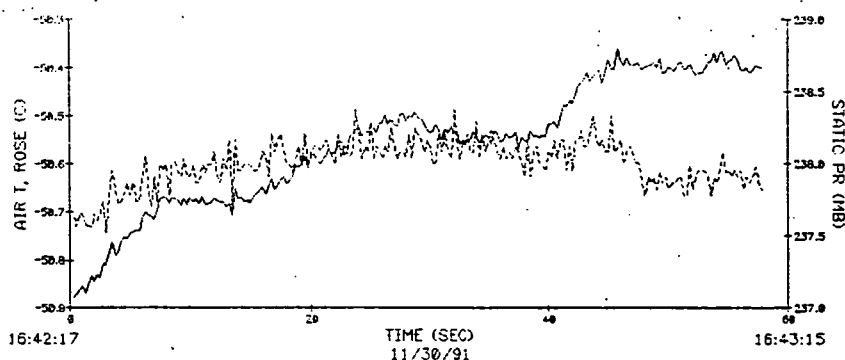
Wind Direction: 236.9 °

Wind Velocity: 69.16 m/sec

Pressure: 221.7 mb

Pressure Altitude: 10677.0 m

Aircraft Heading: 221.7 °



11/30/91 16:40:37.5111 16:40:45.8667 DeltaT: 0: 8.3556 TAS1 = 138.1 TAS2 = 139.4

1 mm

11/30/91

16:46:40-16:54:00

Leg # 8

Averages:

Temperature: °C

Dew Point: Not Available

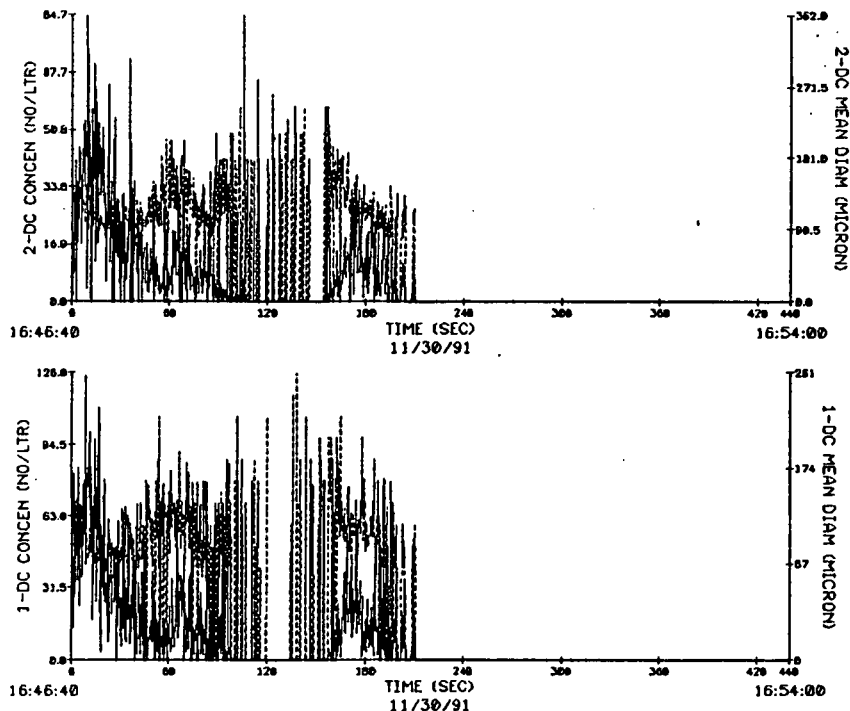
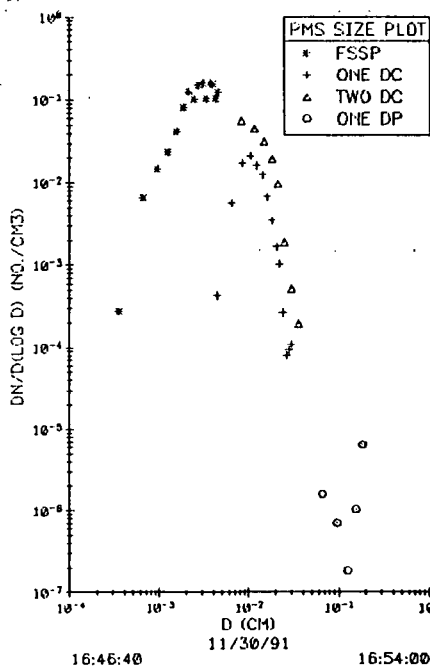
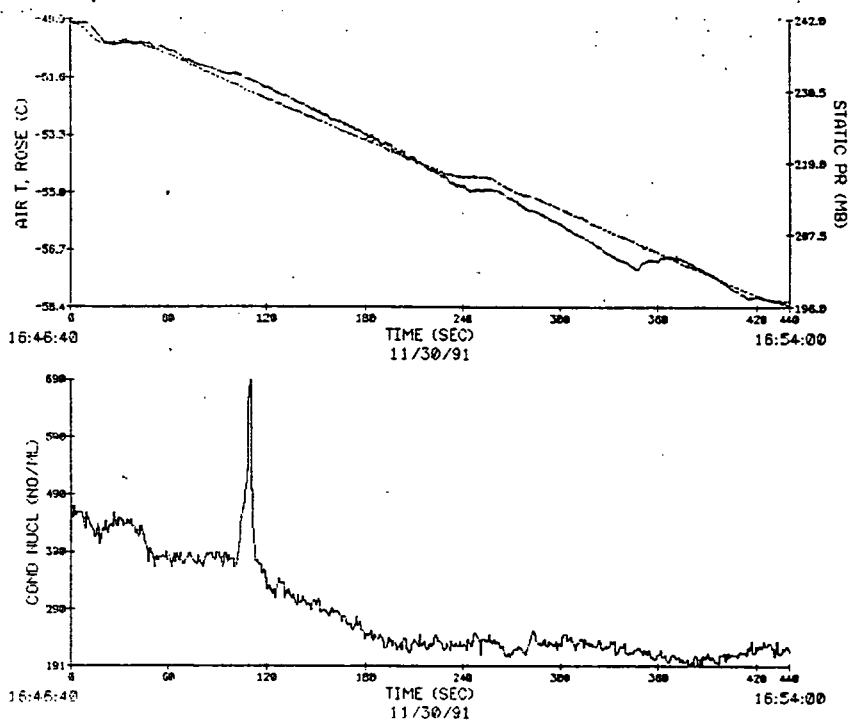
Wind Direction: °

Wind Velocity: m/sec

Pressure: mb

Pressure Altitude: m

Aircraft Heading: °



11/30/91 16:49:30.7004 16:49:31.1943 DeltaT: 0: 0.4939 TAS1 = 150.7 TAS2 = 150.7

1 mm

12/05/91

06:30:00-06:31:45

Leg # 1

Averages:

Temperature: -35.8 ° C

Dew Point: -45.6 ° C

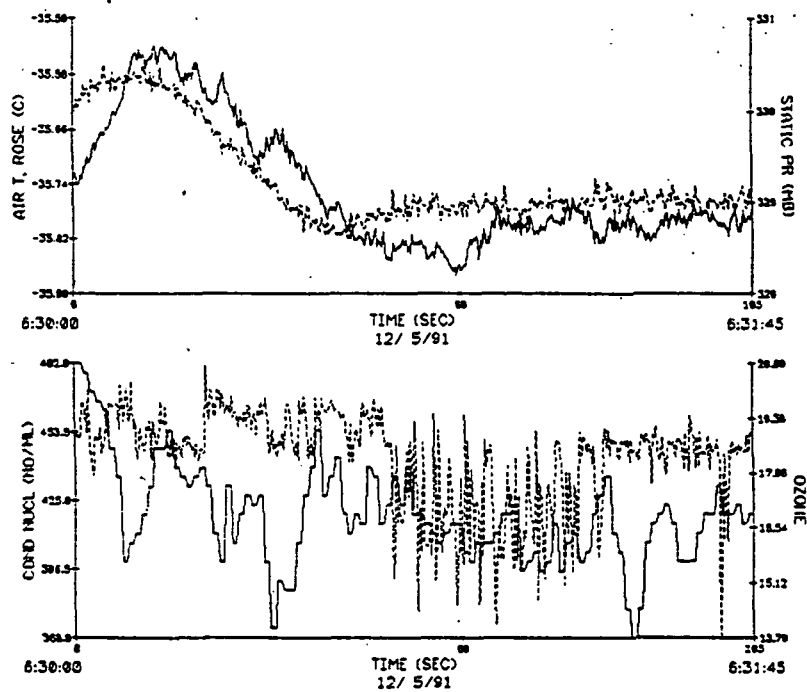
Wind Direction: 273.6 °

Wind Velocity: 38.92 m/sec

Pressure: 329.16 mb

Pressure Altitude: 8777.1 m

Aircraft Heading: 269.9 °



No Cloud

12/05/91

06:35:20-06:37:27

Leg # 2

Averages:

Temperature: -37.7 °C

Dew Point: -46.8 °C

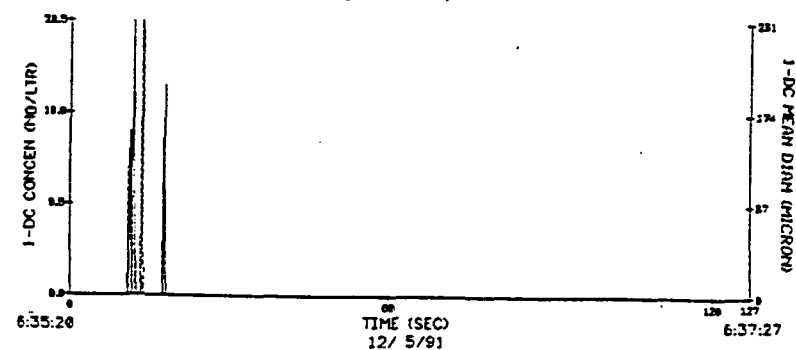
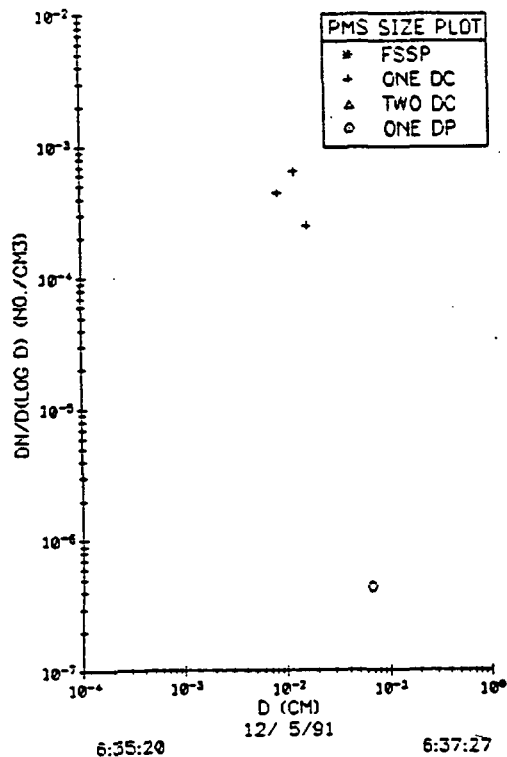
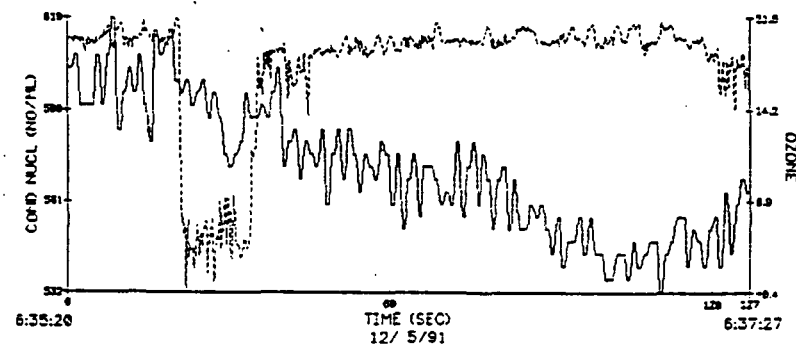
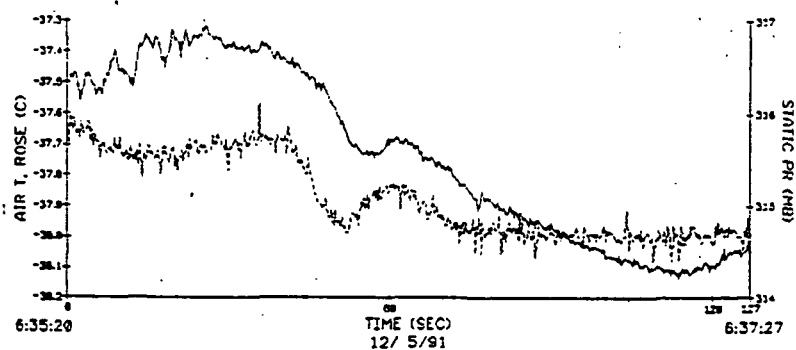
Wind Direction: 275.4 °

Wind Velocity: 38.78 m/sec

Pressure: 315.09 mb

Pressure Altitude: 9073.4 m

Aircraft Heading: 274.6 °



12/05/91 6:34:36.4247 6:38:06.0511 DeltaT: 3:29.6264 TAS1 = 119.3 TAS2 = 124.3

1 mm

12/05/91

06:40:48-06:42:40

Leg # 3

Averages:

Temperature: -40.4 °C

Dew Point: -43.0 °C

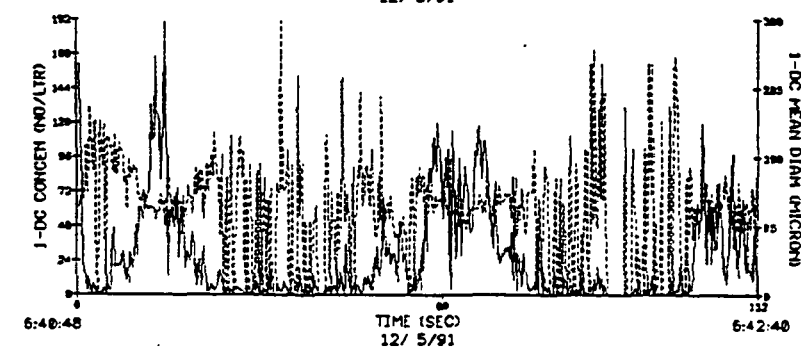
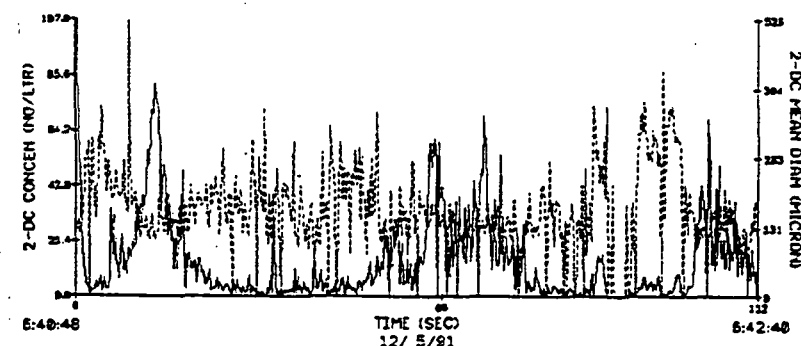
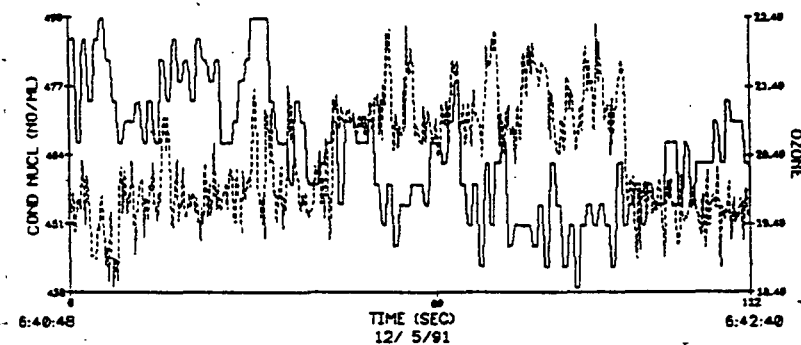
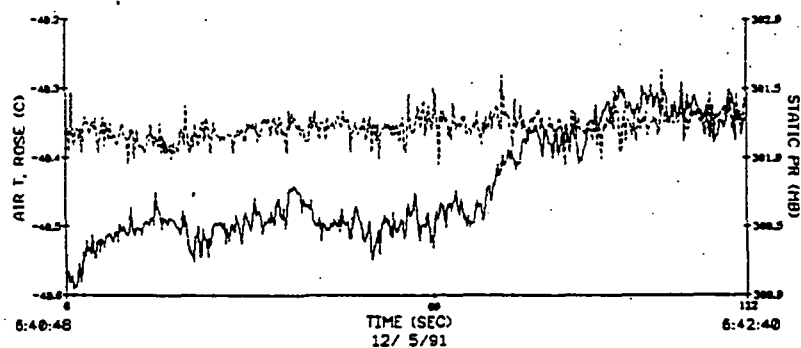
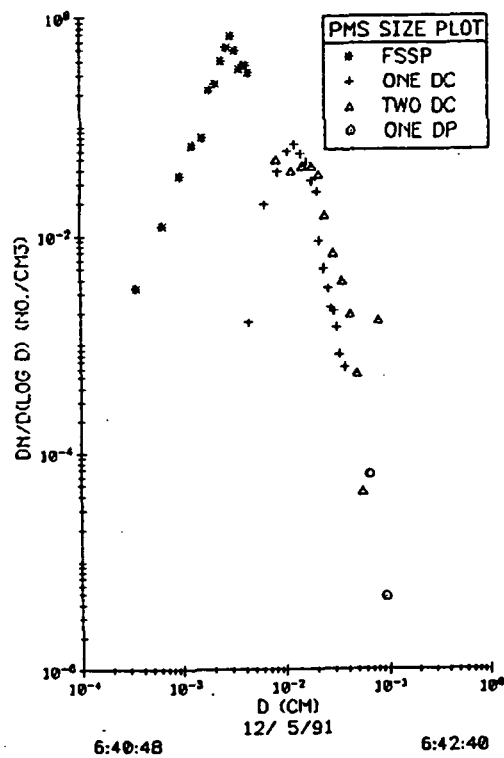
Wind Direction: 274.2 °

Wind Velocity: 41.87 m/sec

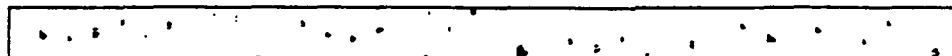
Pressure: 301.24 mb

Pressure Altitude: 9375.7 m

Aircraft Heading: 281.0 °



12/05/91 6:41:48.1543 6:41:48.4932 DeltaT: 0: 0.3389 TAS1 = 125.3 TAS2 = 125.3



1 mm



12/05/91

06:46:16-06:48:34

Leg # 4

Averages:

Temperature: -41.4 °C

Dew Point: -41.2 °C

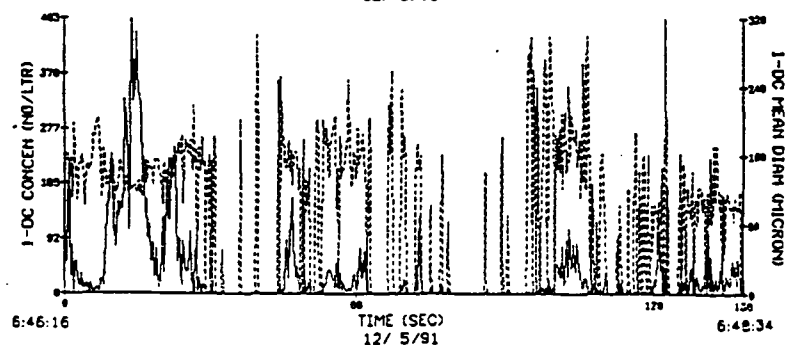
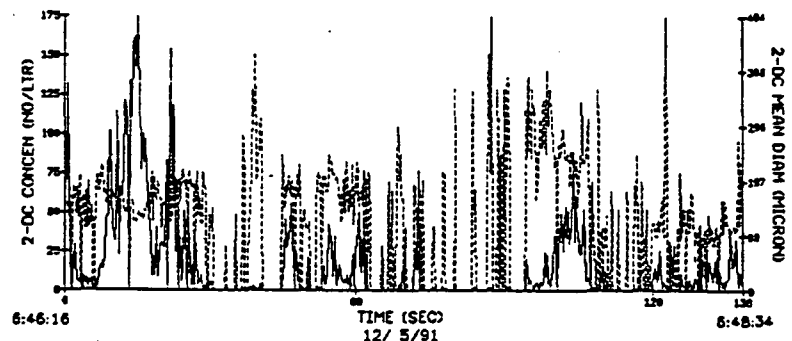
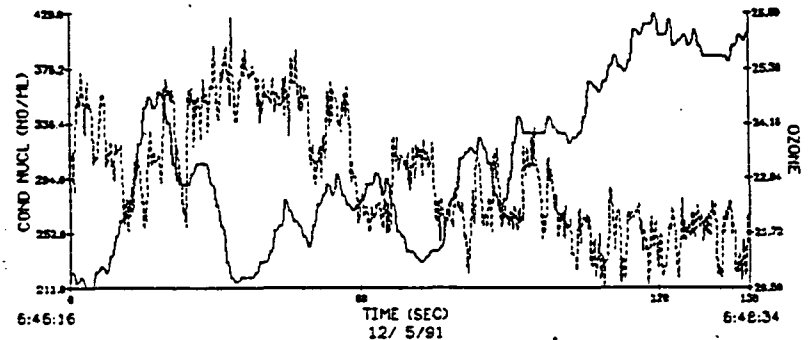
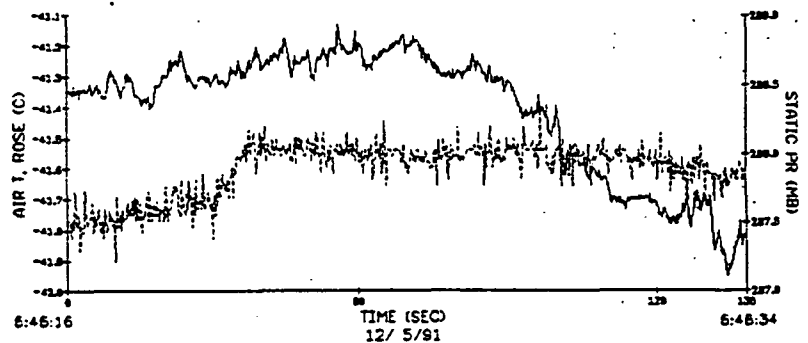
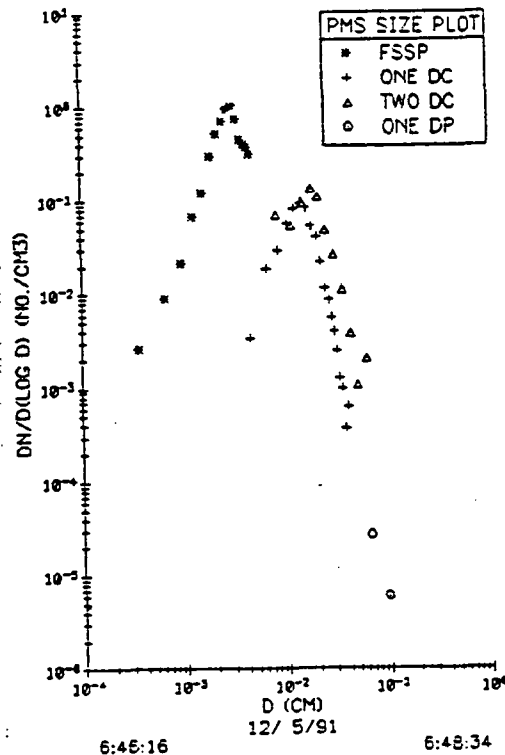
Wind Direction: 270.0 °

Wind Velocity: 47.28 m/sec

Pressure: 287.88 mb

Pressure Altitude: 9678.0 m

Aircraft Heading: 271.4 °



2/05/91 6:47:03.5545 6:47:04.0305 DeltaT: 0: 0.4760 TAS1 = 118.3 TAS2 = 118.3

1 mm

12/05/91

06:53:11-06:55:17

Leg # 5

Averages:

Temperature: -43.9 °C

Dew Point: Not Available

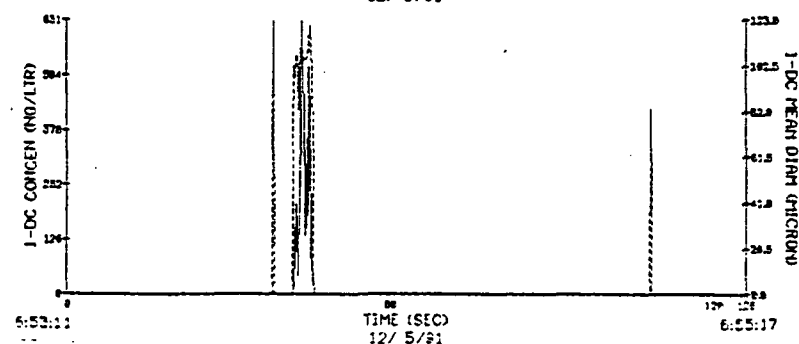
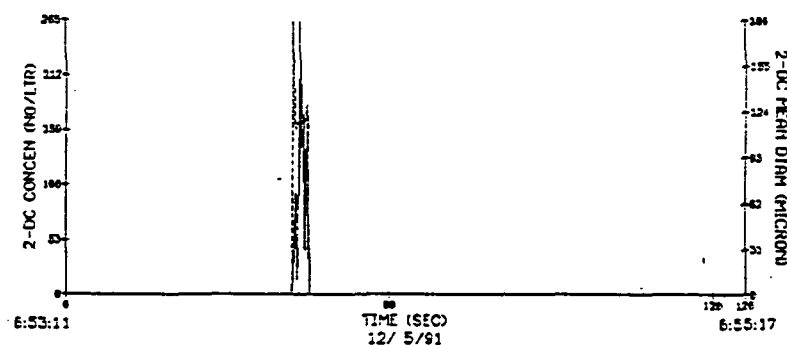
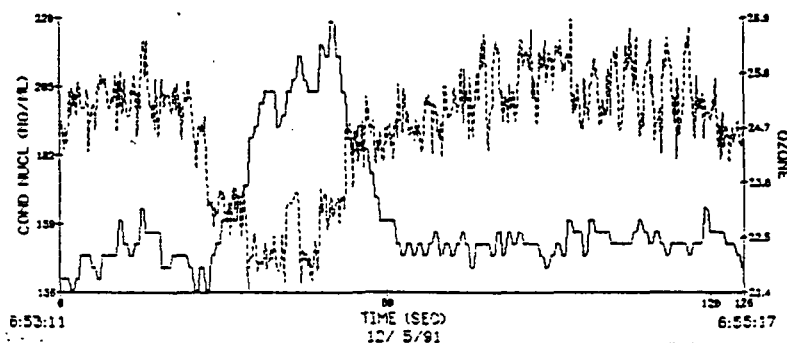
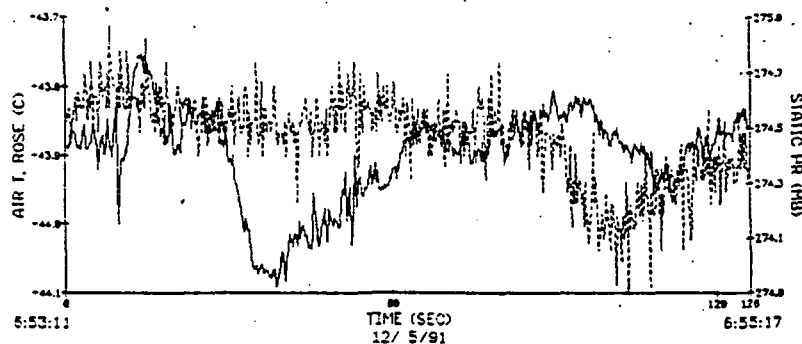
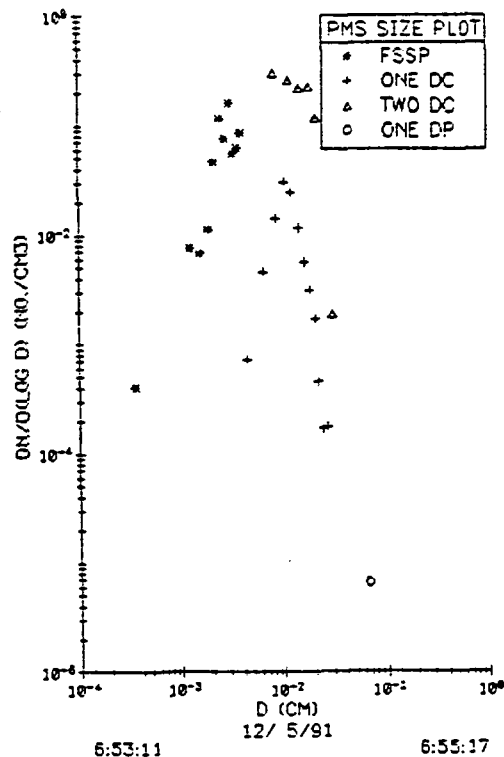
Wind Direction: 271.0 °

Wind Velocity: 47.82 m/sec

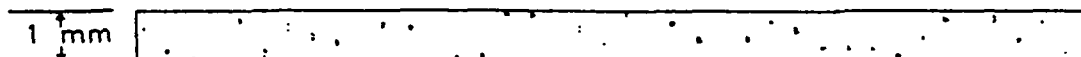
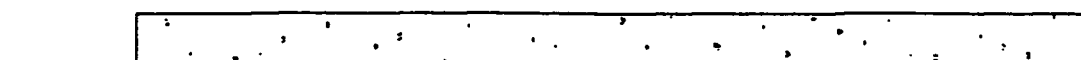
Pressure: 274.56 mb

Pressure Altitude: 9991.1 m

Aircraft Heading: 277.4 °



12/05/91 6:53:55.6742 6:53:55.7353 DeltaT: 0: 0.0611 TAS1 = 124.6 TAS2 = 124.6



12/05/91

06:59:27-07:01:19

Leg # 6

Averages:

Temperature: -46.4 °C

Dew Point: -48.4 °C

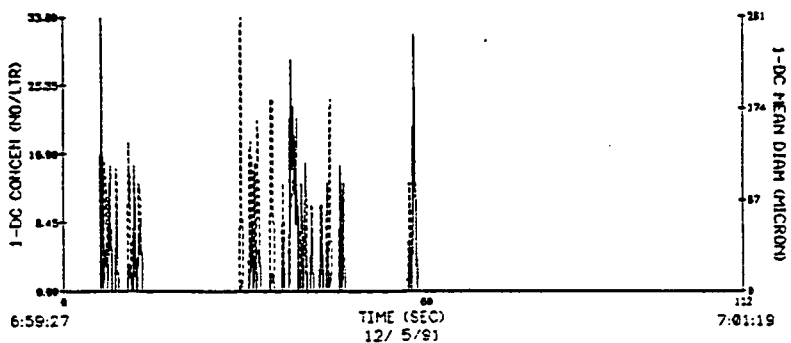
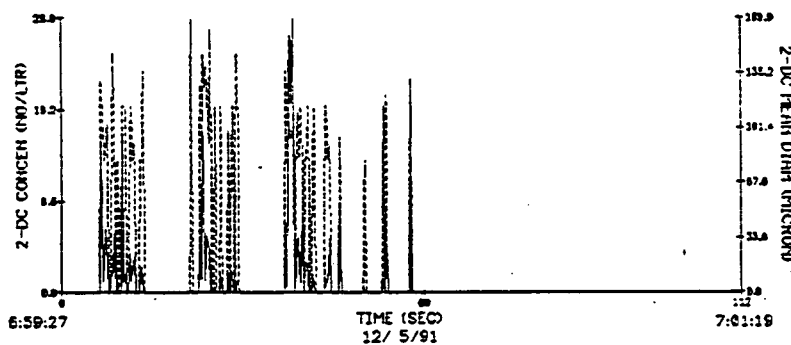
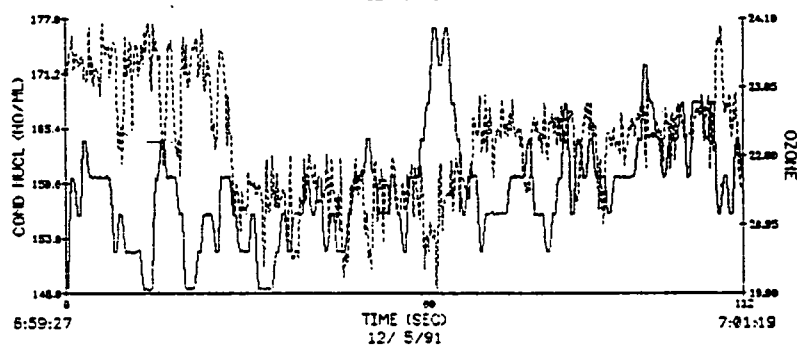
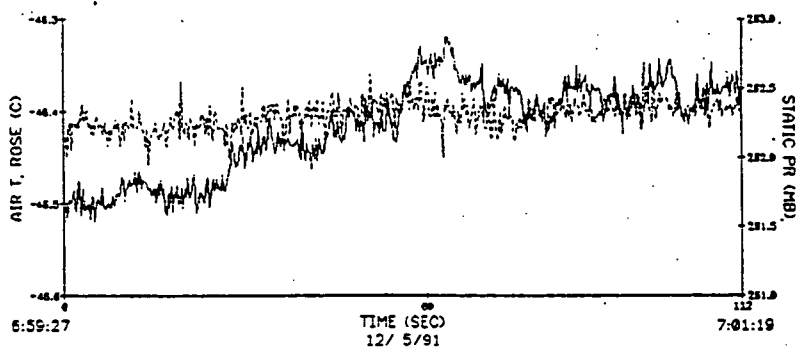
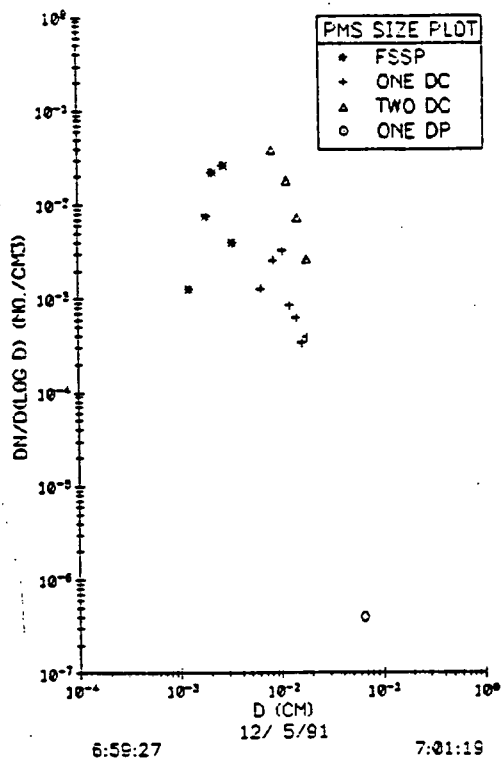
Wind Direction: 273.0 °

Wind Velocity: 48.94 m/sec

Pressure: 262.32 mb

Pressure Altitude: 10289.8 m

Aircraft Heading: 271.9 °



12/05/91

7:12:58.3965

7:13:23.6341

DeltaT: 0:25.2376

TAS1 = 134.1

TAS2 = 133.6

1 mm

12/05/91

07:05:19-07:07:23

Leg # 7

Averages:

Temperature: -48.0 °C

Dew Point: -53.7 °C

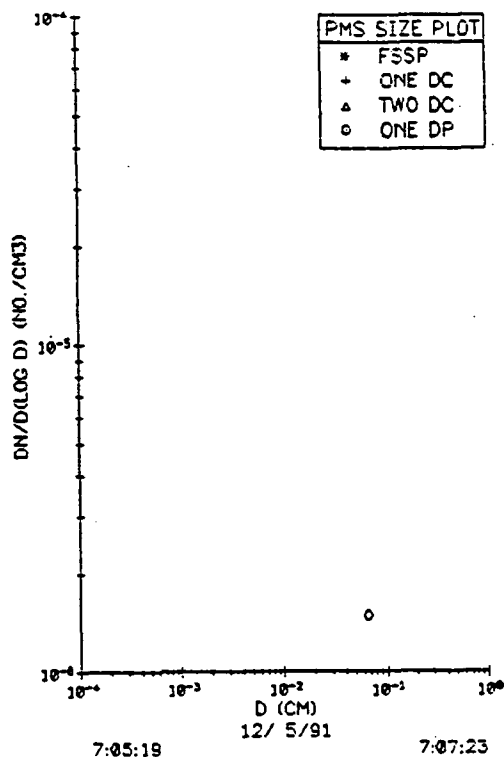
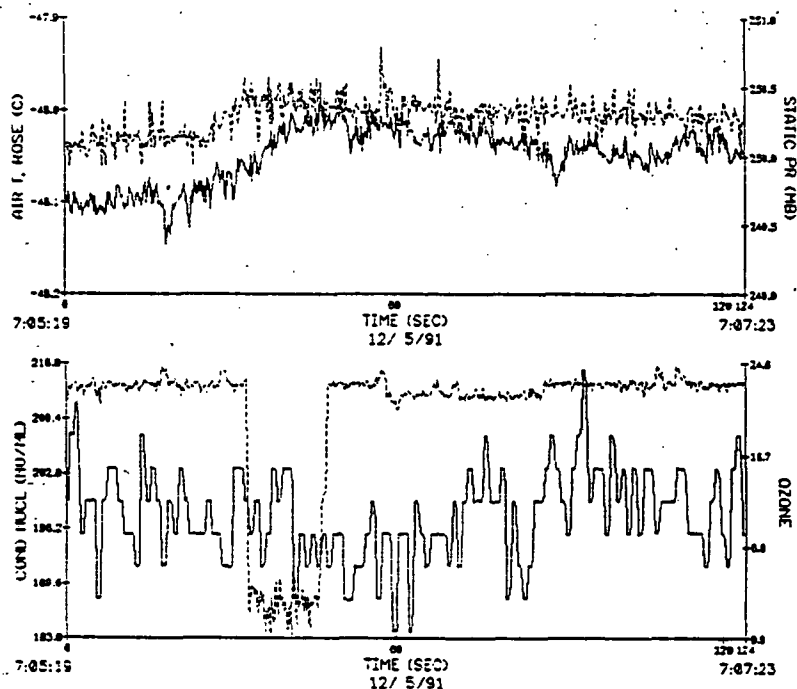
Wind Direction: 272.8 °

Wind Velocity: 51.12 m/sec

Pressure: 250.29 mb

Pressure Altitude: 10594.6 m

Aircraft Heading: 273.9 °



PMS SIZE PLOT
 * FSSP
 + ONE DC
 Δ TWO DC
 ○ ONE DP

No 2-DC DATA

12/05/91

07:12:40-07:14:40

Leg # 8

Averages:

Temperature: -50.8 °C

Dew Point: -54.2 °C

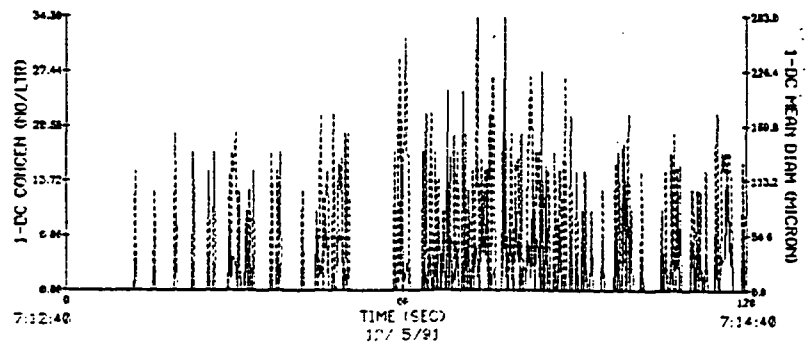
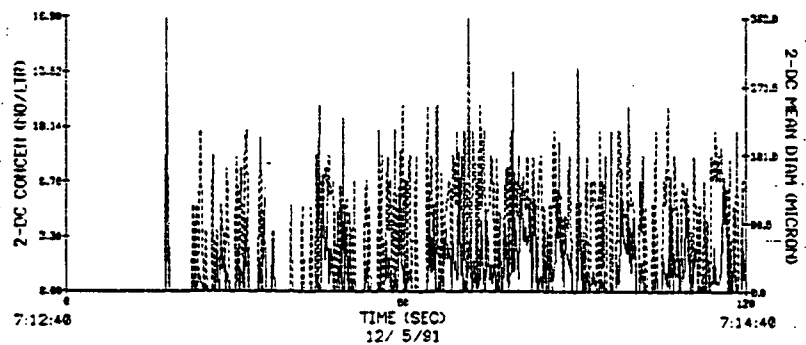
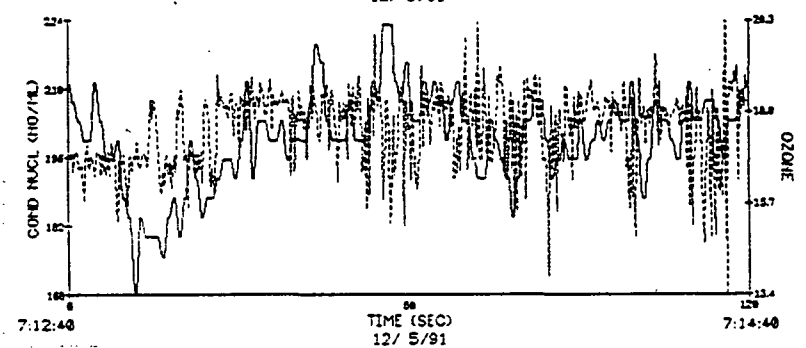
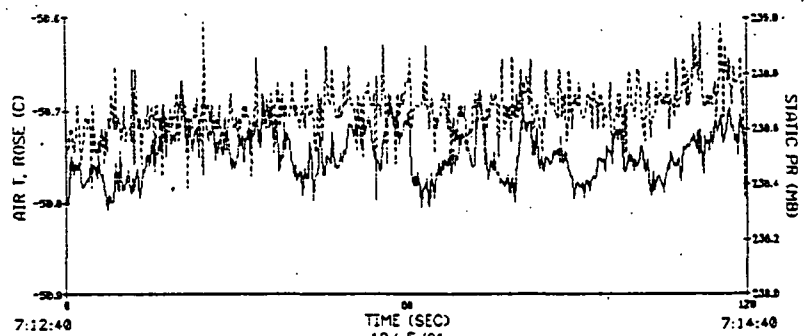
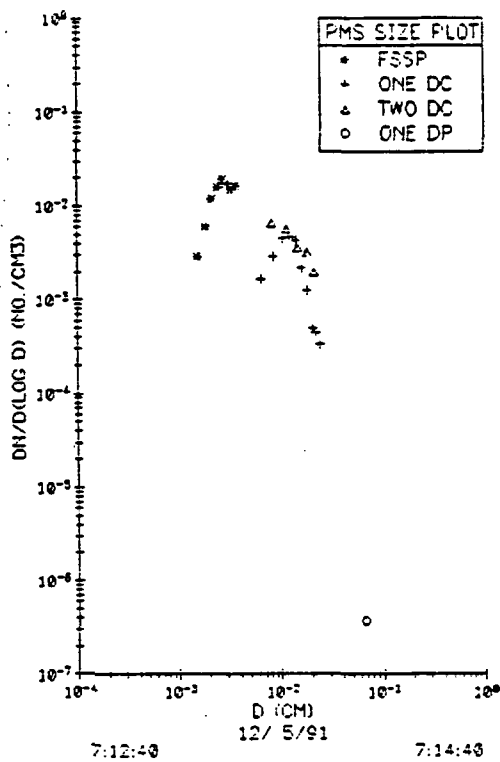
Wind Direction: 273.4 °

Wind Velocity: 52.14 m/sec

Pressure: 238.68 mb

Pressure Altitude: 10990.1 m

Aircraft Heading: 272.6 °



12/05/91

7:14:18.8037

7:14:28.0535

DeltaT: 0: 9.2478

TAS1 = 133.3

TAS2 = 133.2

1 mm

12/05/91

07:18:27-07:20:42

Leg # 9

Averages:

Temperature: -53.3 °C

Dew Point: -55.1 °C

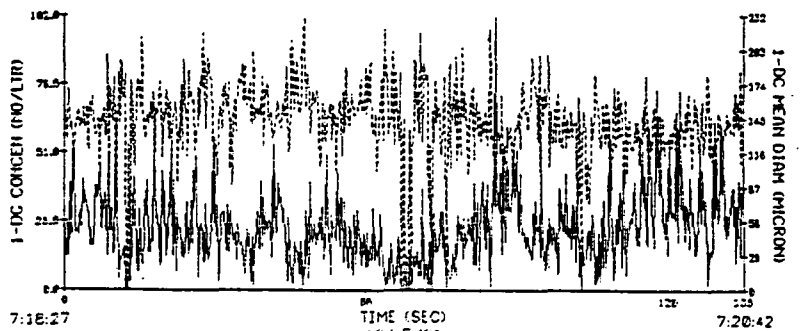
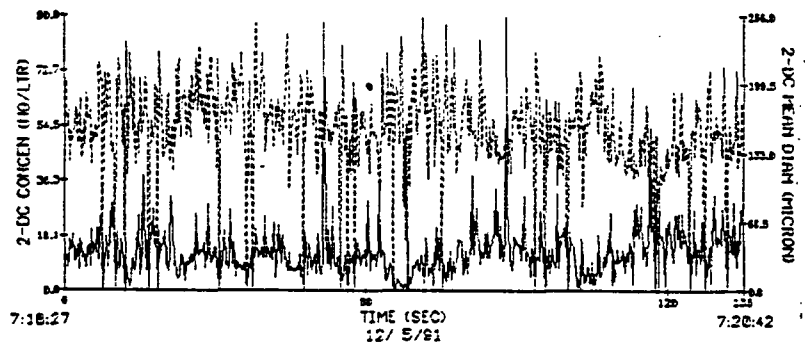
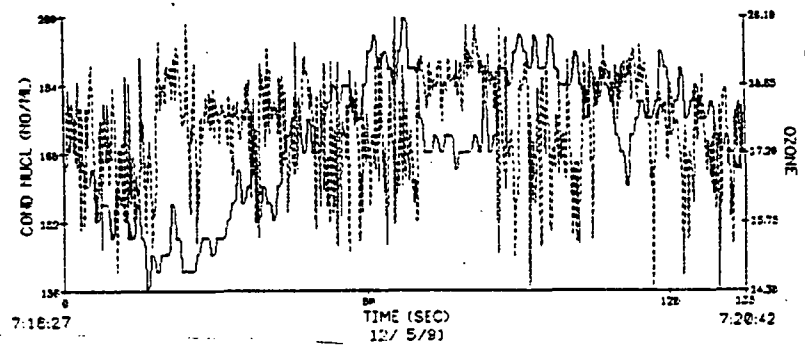
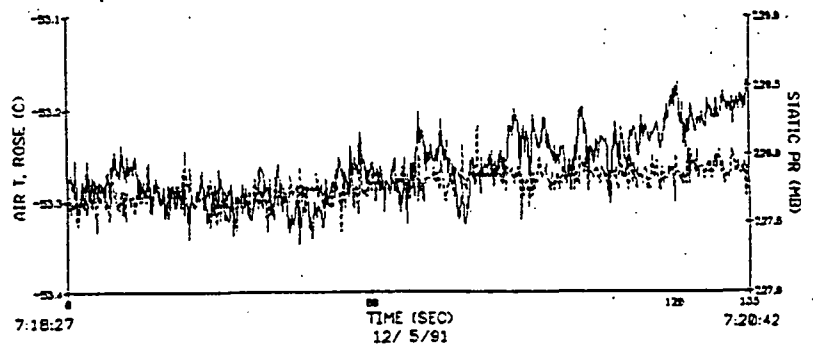
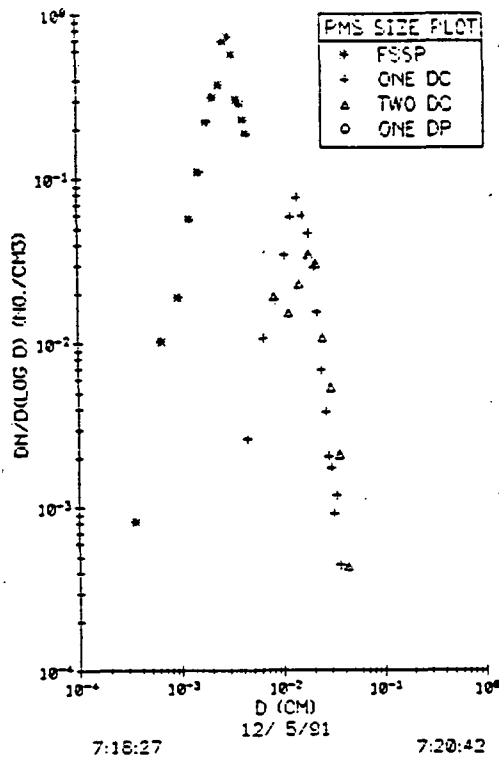
Wind Direction: 274.7 °

Wind Velocity: 52.93 m/sec

Pressure: 227.79 mb

Pressure Altitude: 11198.1 m

Aircraft Heading: 273.3 °



12/05/91

7:19:30.9267

7:19:32.2743

DeltaT: 0: 1.3476

TAS1 = 130.0

TAS2 = 130.1

1 mm

12/05/91

07:24:33-07:27:14

Leg # 10

Averages:

Temperature: -56.2 °C

Dew Point: -57.6 °C

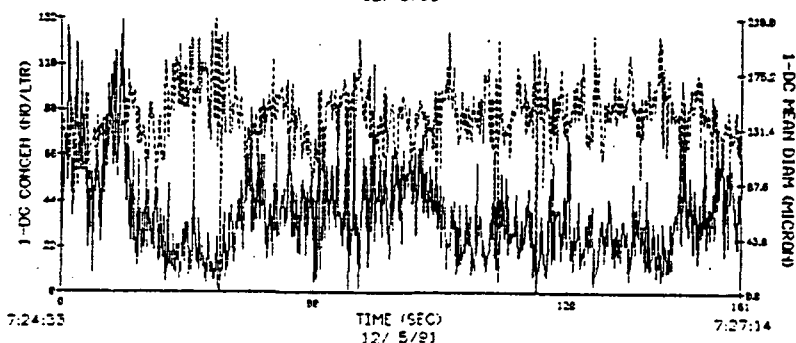
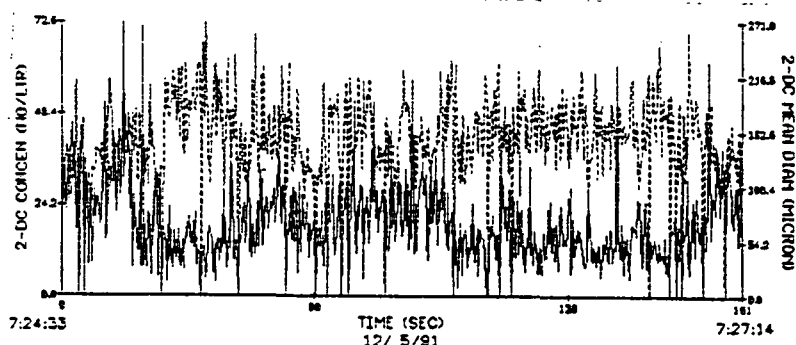
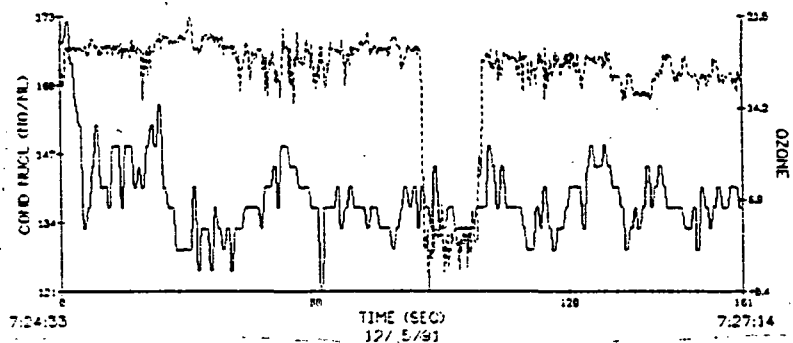
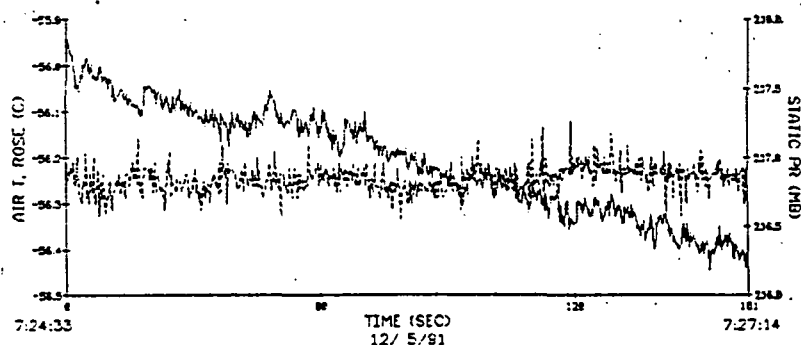
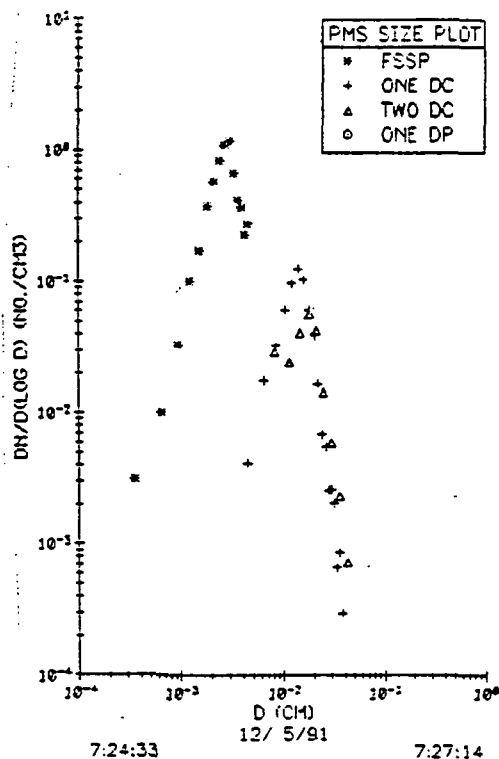
Wind Direction: 275.4 °

Wind Velocity: 52.66 m/sec

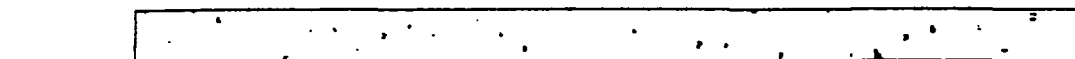
Pressure: 216.85 mb

Pressure Altitude: 11508.6 m

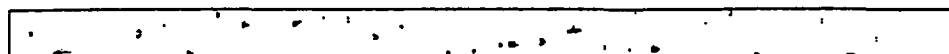
Aircraft Heading: 275.4 °



12/05/91 7:24:44.8212 7:24:45.0614 DeltaT: 0: 0.2402 TAS1 = 122.1 TAS2 = 122.1



1 mm



12/05/91

07:30:55-07:33:35

Leg # 11

Averages:

Temperature: -58.9 °C

Dew Point: -44.3 °C

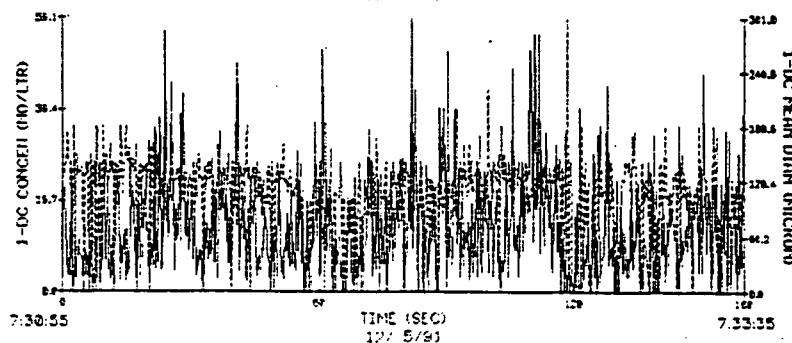
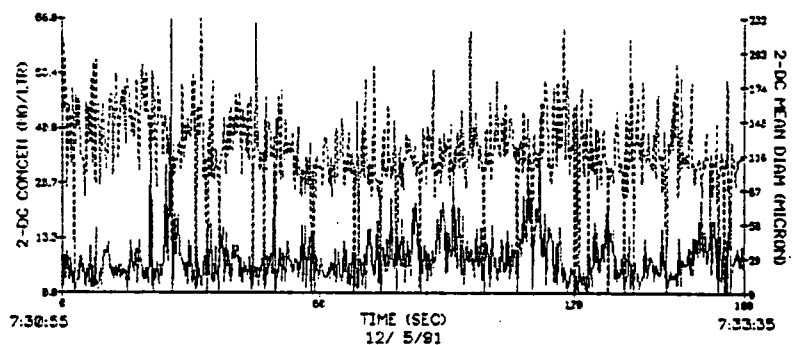
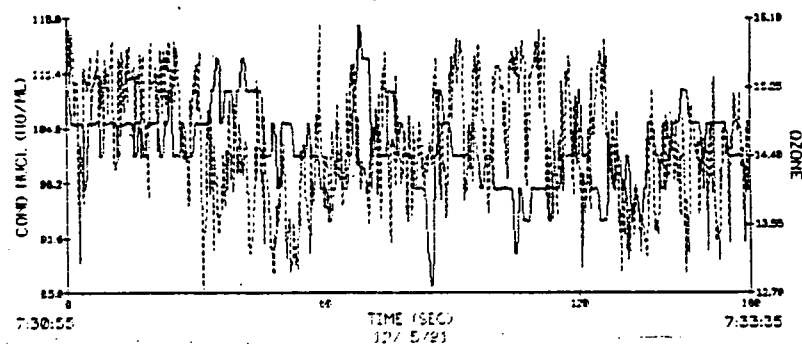
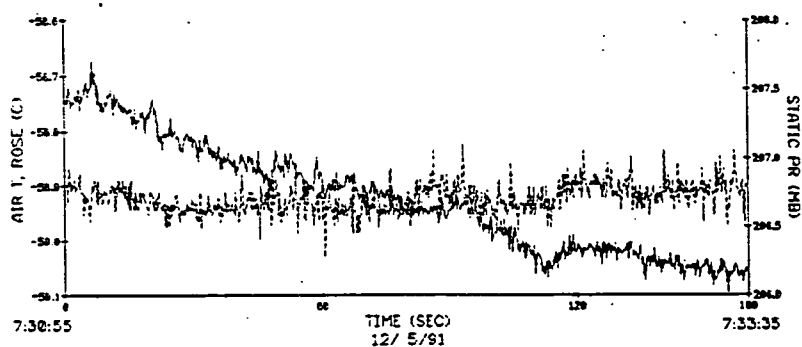
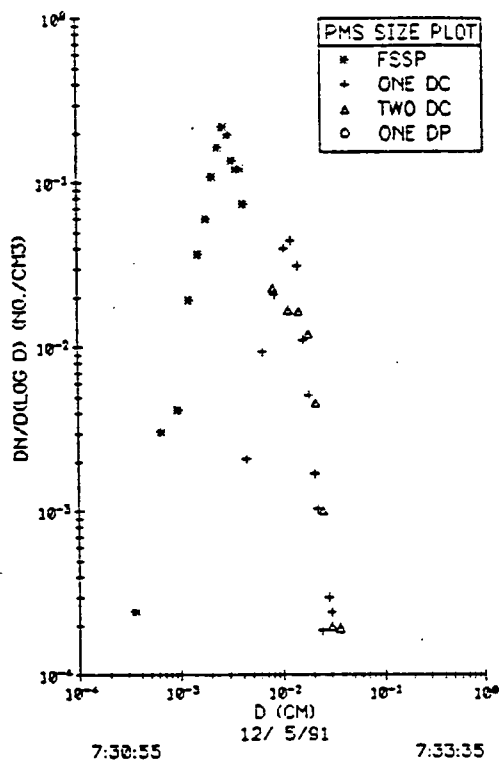
Wind Direction: 275.3 °

Wind Velocity: 54.62 m/sec

Pressure: 206.76 mb

Pressure Altitude: 11808.5 m

Aircraft Heading: 275.7 °



12/05/91

7:32:47.0466

7:32:48.0246

DeltaT: 0: 0.9780

TAS1 = 138.0

TAS2 = 138.3

1 mm

12/05/91

07:38:55-07:41:42

Leg # 12

Averages:

Temperature: -61.5 °C

Dew Point: -63.5 °C

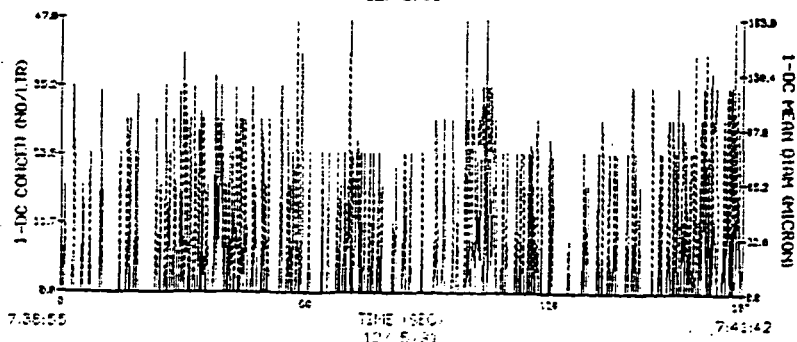
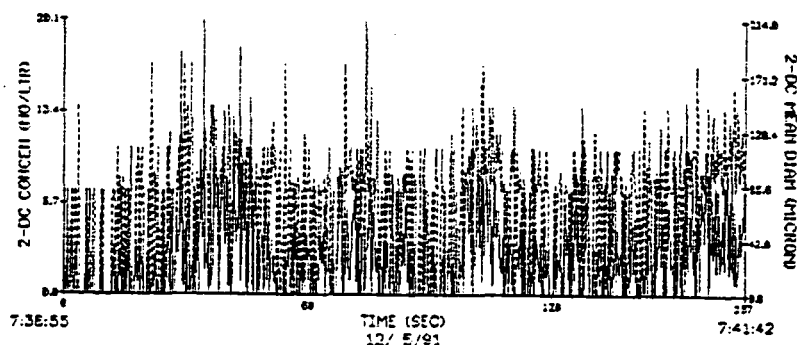
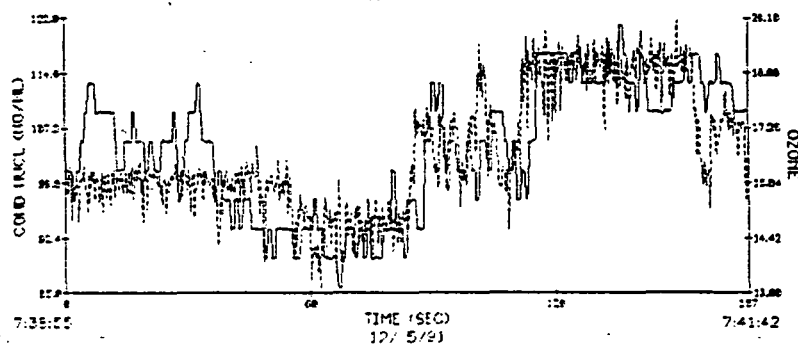
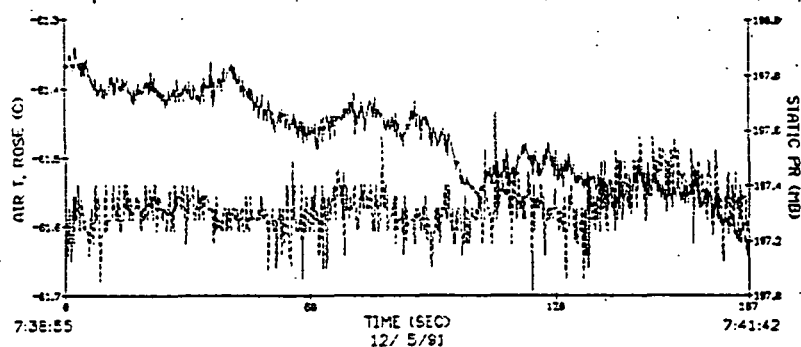
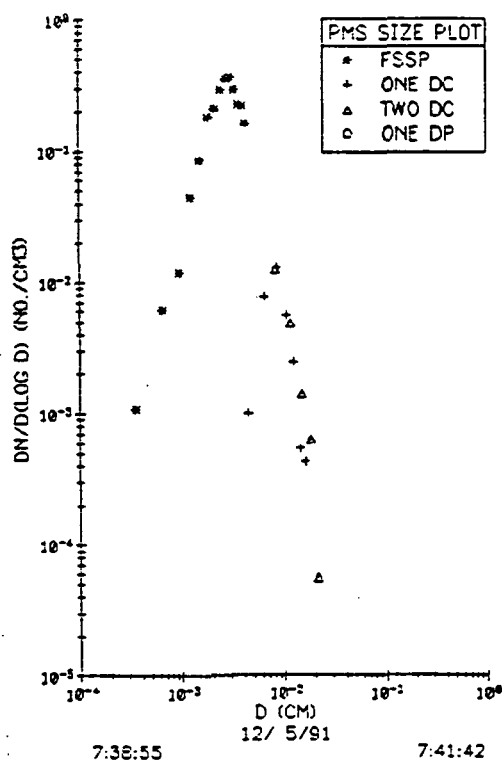
Wind Direction: 276.4 °

Wind Velocity: 55.01 m/sec

Pressure: 197.32 mb

Pressure Altitude: 12097.1 m

Aircraft Heading: 275.4 °



12/05/91

7:52:39.1389

7:52:42.7381

DeltaT: 0: 3.5992

TAS1 = 142.5

TAS2 = 141.4

1 mm

12/05/91

07:48:00-07:50:20

Leg # 13

Averages:

Temperature: -63.8 °C

Dew Point: -65.0 °C

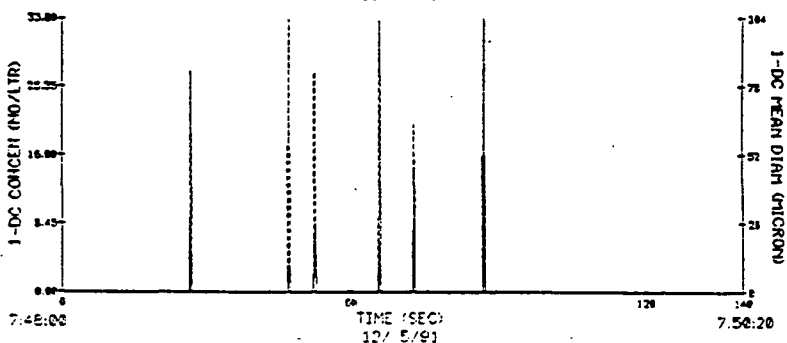
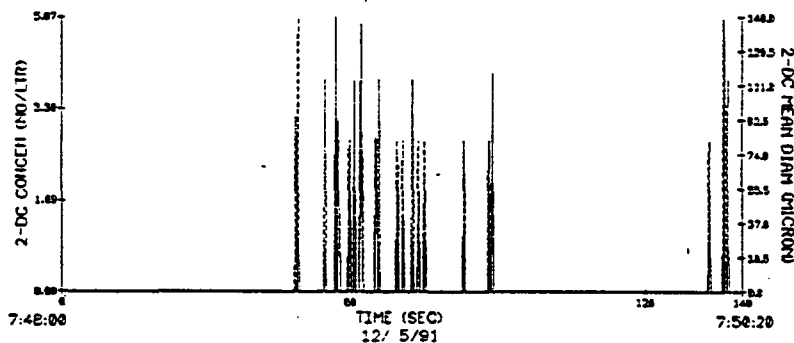
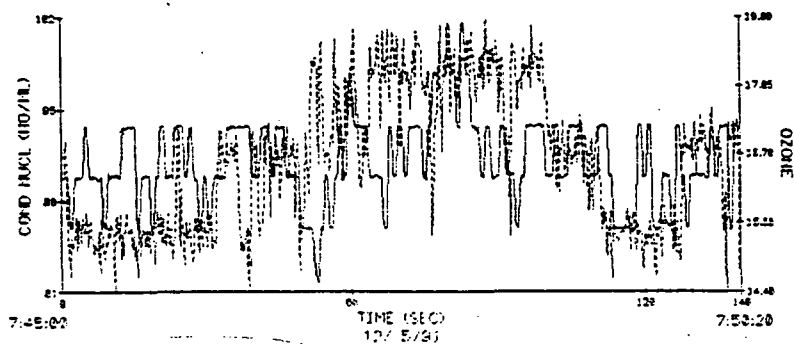
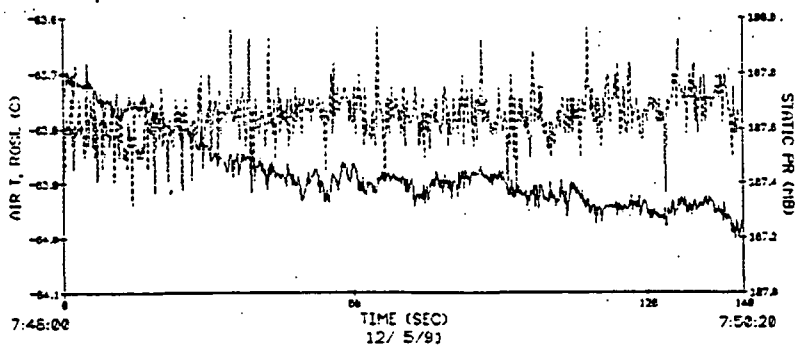
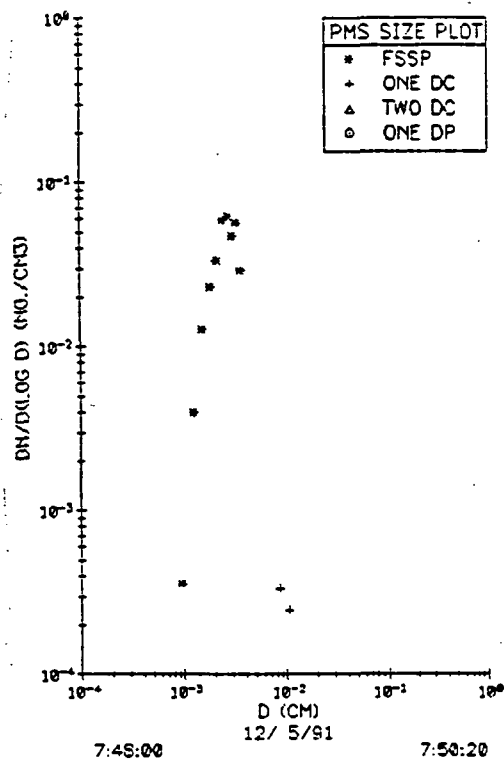
Wind Direction: 277.5 °

Wind Velocity: 54.06 m/sec

Pressure: 187.65 mb

Pressure Altitude: 12406.3 m

Aircraft Heading: 277.7 °



12/05/91

7:48:49.0181

7:49:02.3312

DeltaT: 0:13.3131

TAS1 = 133.9

TAS2 = 134.6

1 mm

12/05/91

07:50:40-08:04:30

Leg # 14

Averages:

Temperature: °C

Dew Point: °C

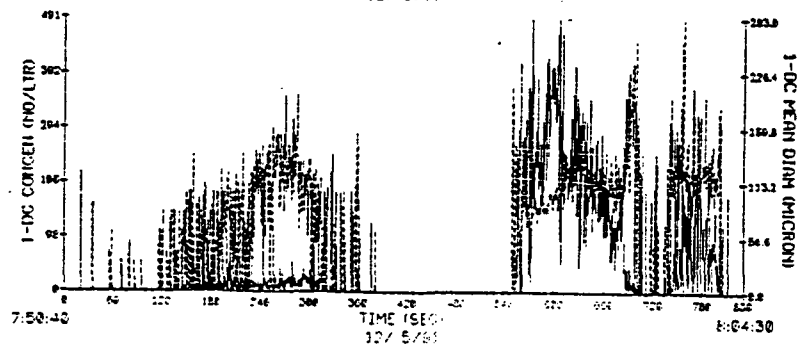
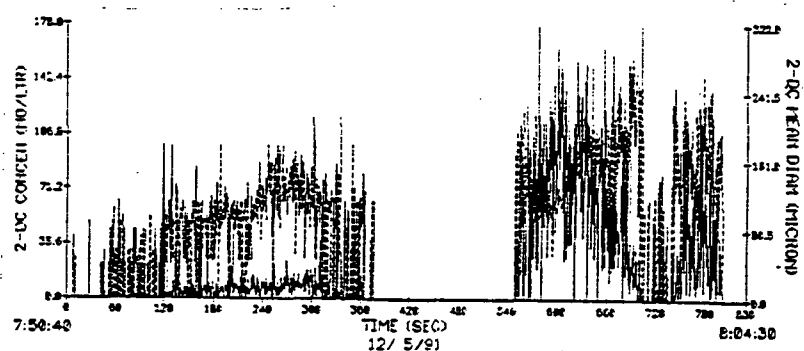
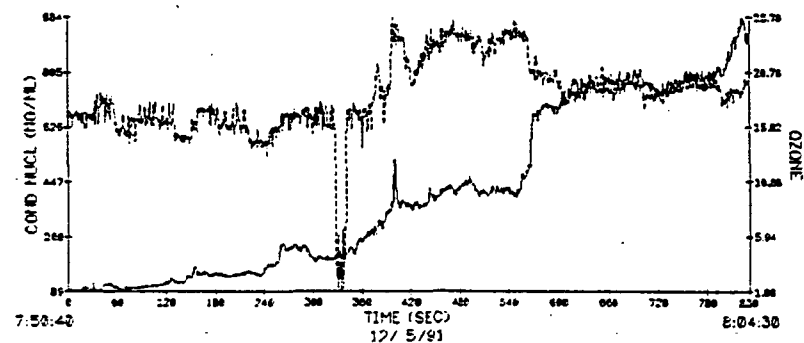
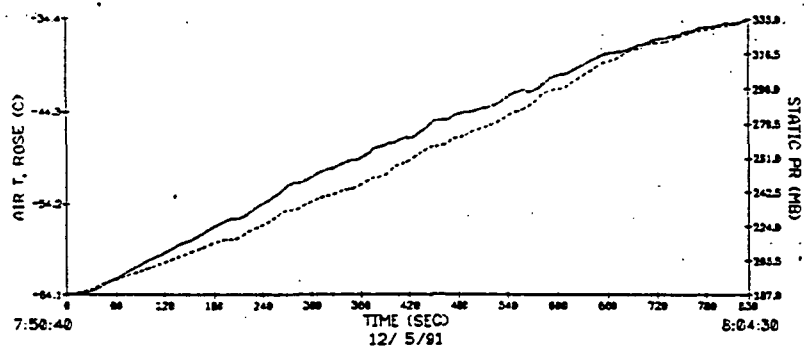
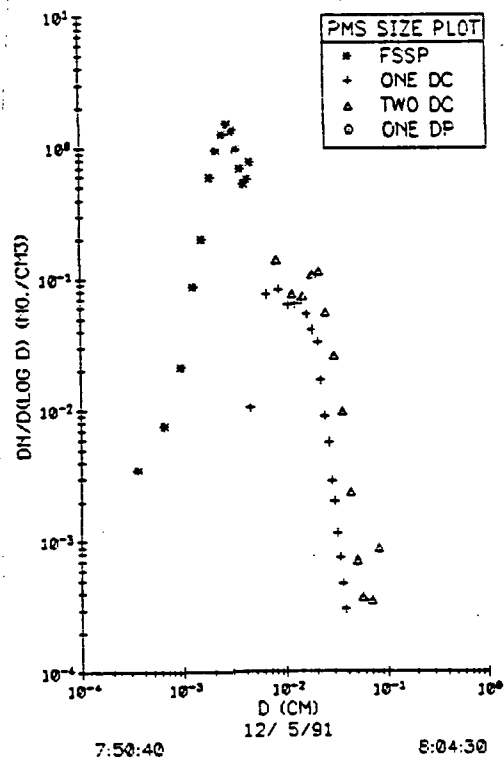
Wind Direction: °

Wind Velocity: m/sec

Pressure: mb

Pressure Altitude: m

Aircraft Heading: °



12/05/91

8:00:44.1274

8:00:44.2190

DeltaT: 0: 0.0916

TAS1 = 109.2

TAS2 = 109.2

1 mm

12/05/91

08:10:40-08:12:43

Leg # 15

Averages:

Temperature: -37.8 °C

Dew Point: -38.3 °C

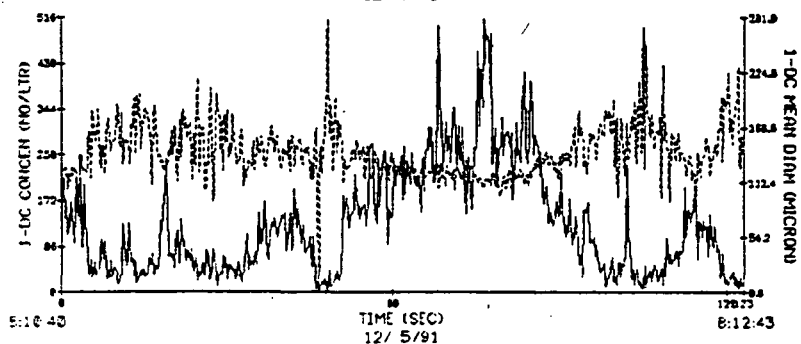
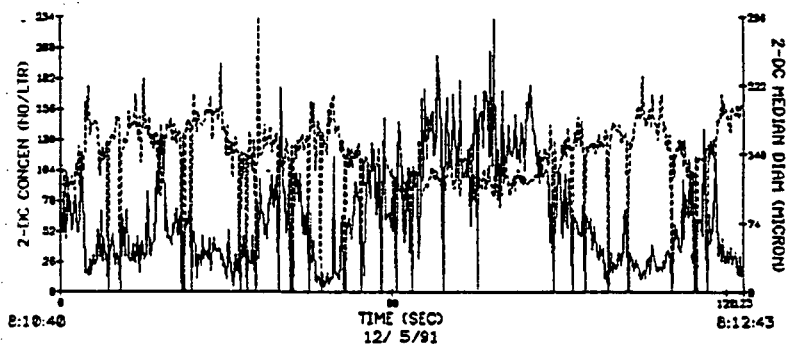
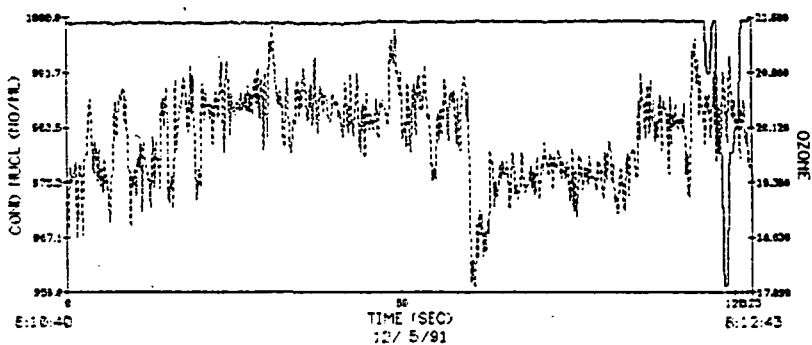
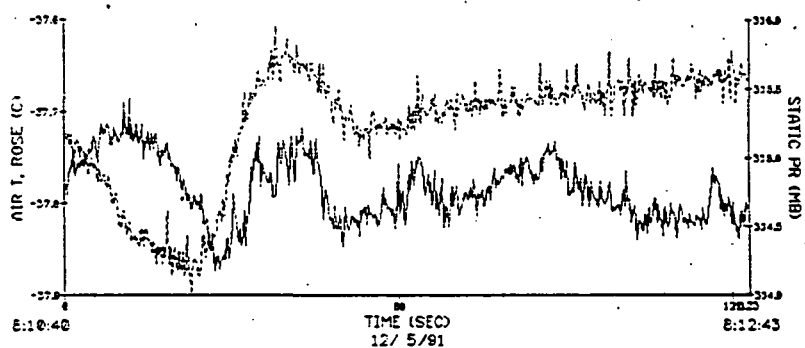
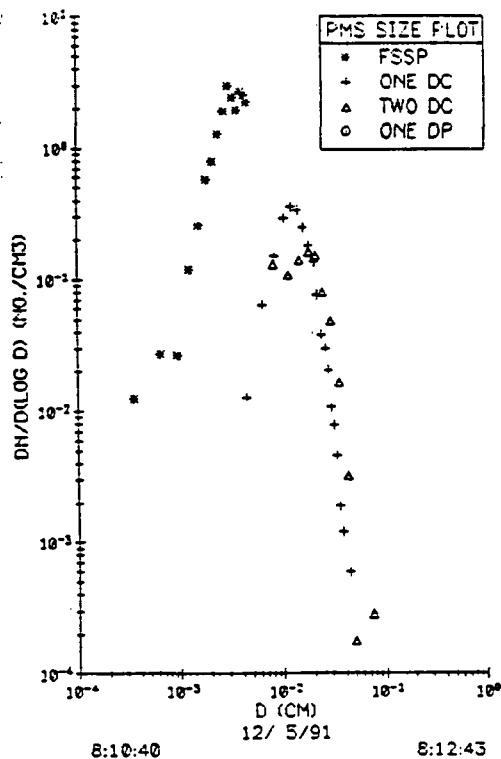
Wind Direction: 272.8 °

Wind Velocity: 41.98 m/sec

Pressure: 315.40 mb

Pressure Altitude: 9069.9 m

Aircraft Heading: 272.4 °



12/05/91 8:11:07.3406 8:11:07.6102 DeltaT: 0: 0.2696 TAS1 = 119.2 TAS2 = 119.2

1 mm

12/05/91

08:17:17-08:19:35

Leg # 16

Averages:

Temperature: -40.0 °C

Dew Point: -40.9 °C

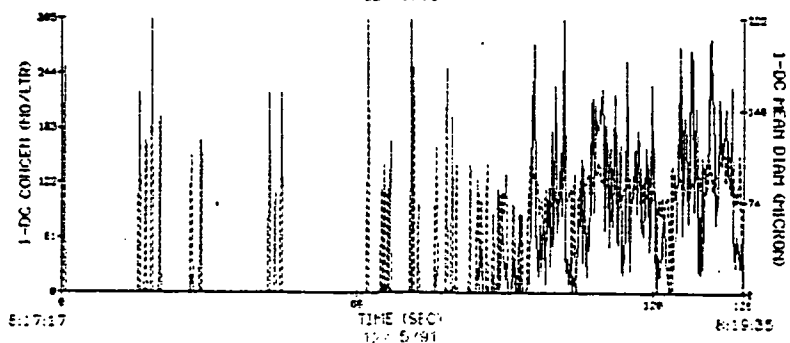
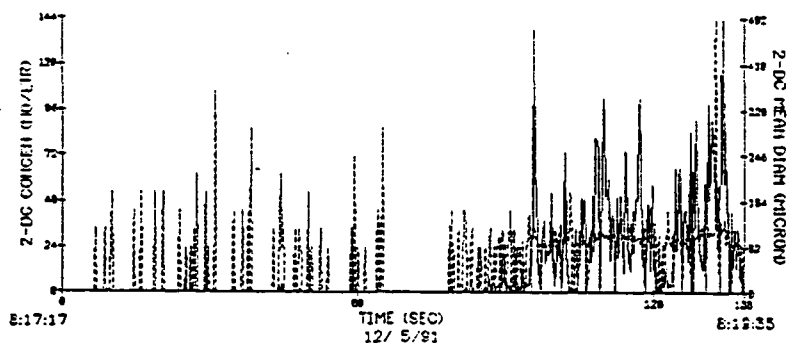
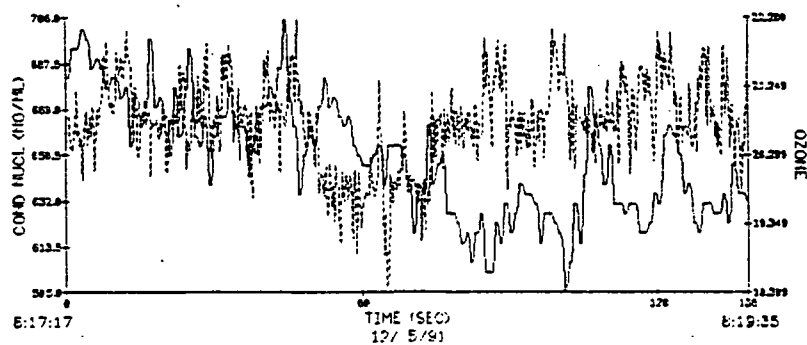
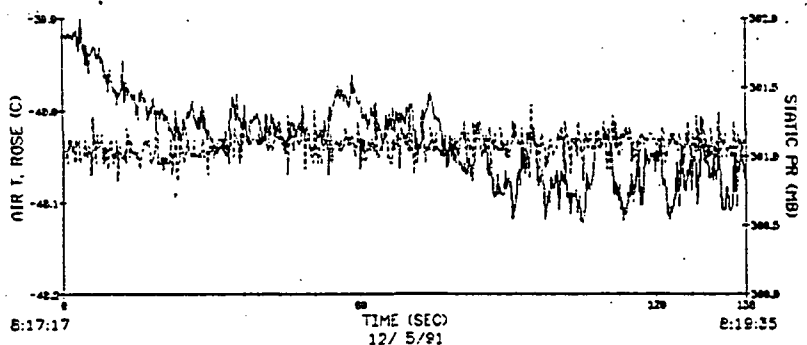
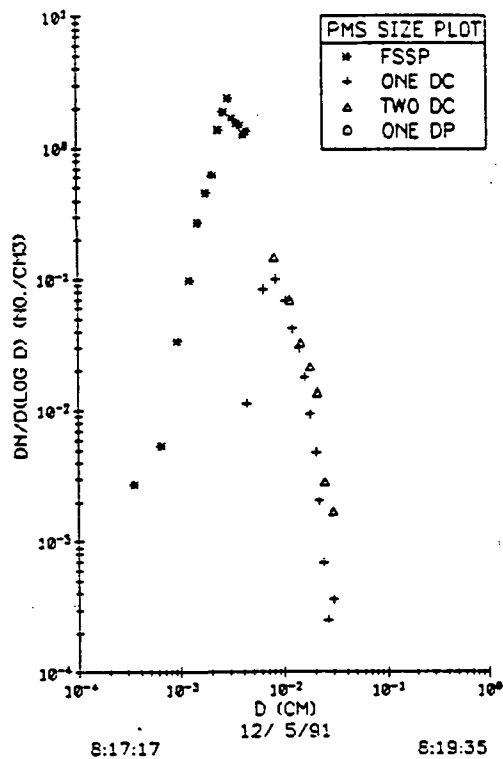
Wind Direction: 272.2 °

Wind Velocity: 44.30 m/sec

Pressure: 301.08 mb

Pressure Altitude: 9379.0 m

Aircraft Heading: 270.0 °



12/05/91

8:18:59.1725

8:18:59.3377

DeltaT: 0: 0.1652

TAS1 = 113.6

TAS2 = 113.6

1 mm

12/05/91

08:24:23-08:27:45

Leg # 17

Averages:

Temperature: -37.6 °C

Dew Point: -38.3 °C

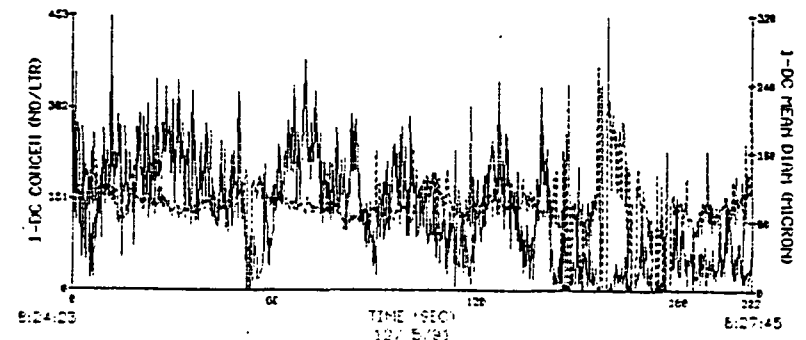
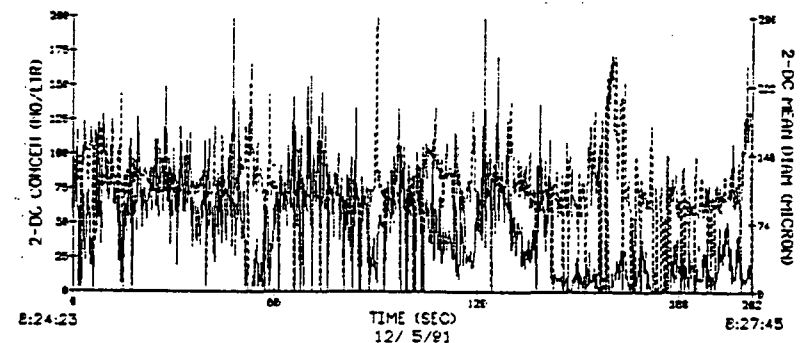
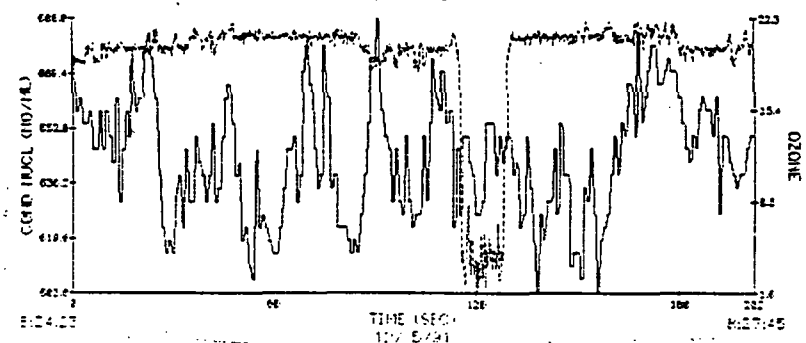
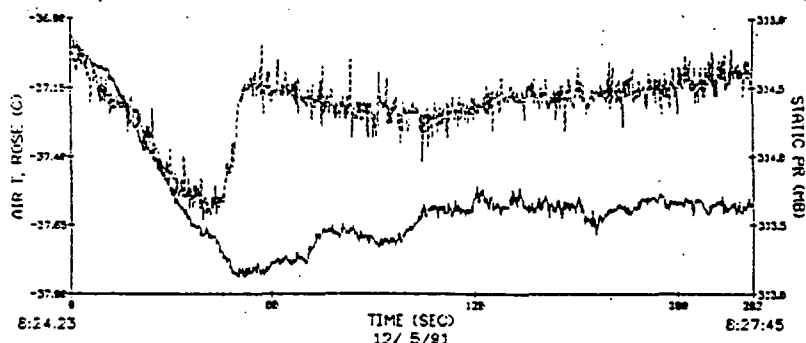
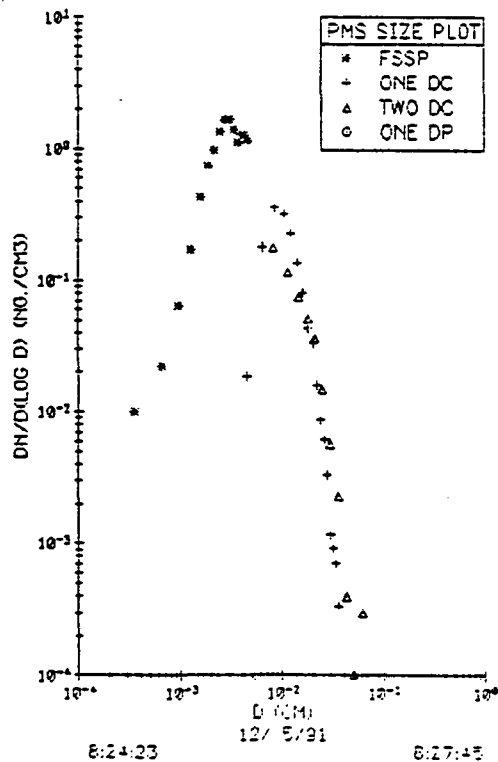
Wind Direction: 272.2 °

Wind Velocity: 43.19 m/sec

Pressure: 314.36 mb

Pressure Altitude: 9084.2 m

Aircraft Heading: 273.0 °



12/05/91

8:24:51.5194

8:24:51.7243

DeltaT: 0: 0.2049

TAS1 = 99.5

TAS2 = 99.5

1 mm

12/05/91

18:15:00-18:23:30

Leg # 1

Averages:

Temperature: -50.1 °C

Dew Point: Not Available

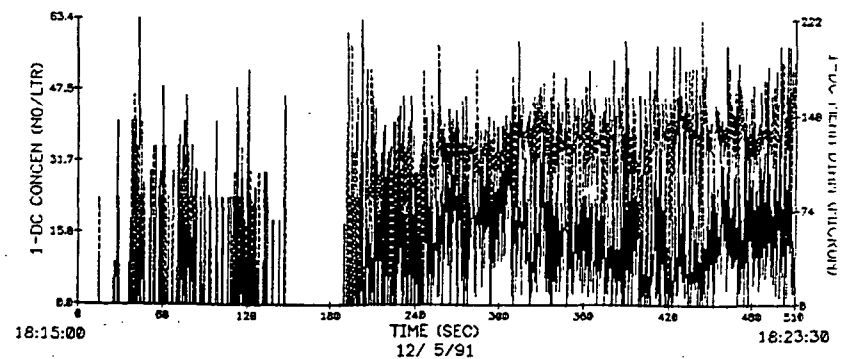
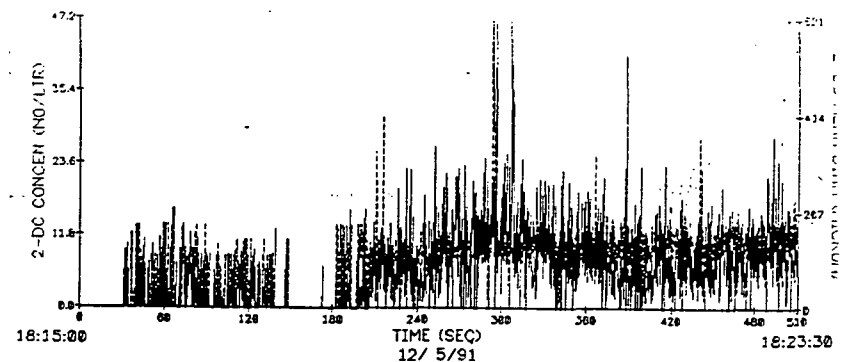
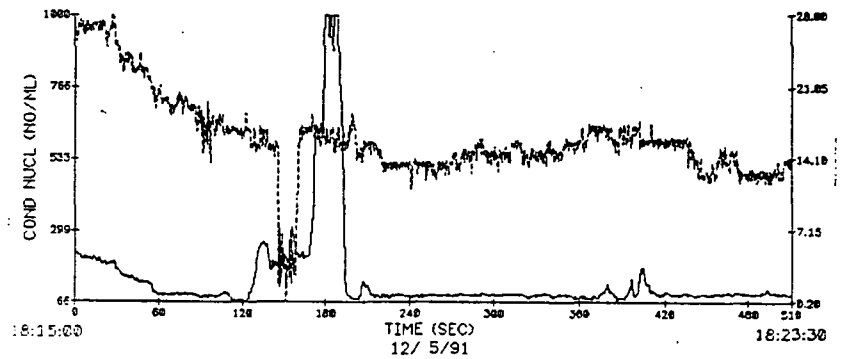
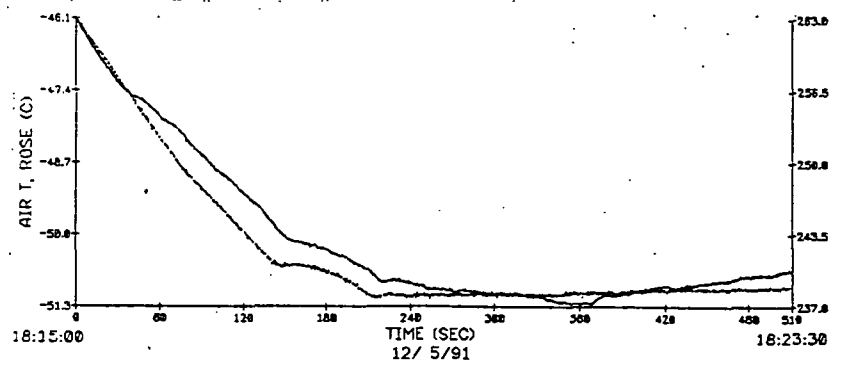
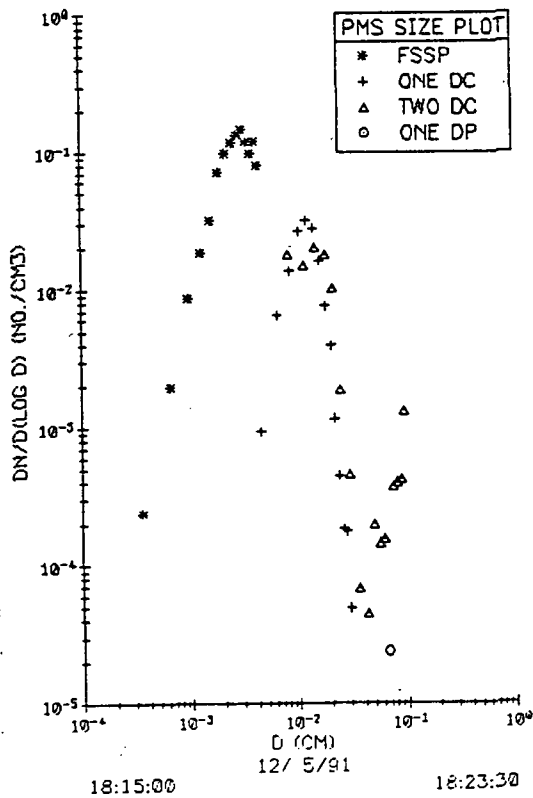
Wind Direction: 280.1 °

Wind Velocity: 62.23 m/sec

Pressure: 242.20 mb

Pressure Altitude: 10808.0 m

Aircraft Heading: 274.1 °



12/05/91 18:21:02.6631 18:21:03.9138 DeltaT: 0: 1.2507 TAS1 = 145.7 TAS2 = 145.9

1 mm

12/05/91

18:25:45-18:29:50

Leg # 2

Averages:

Temperature: -51.0 °C

Dew Point: -52.0 °C

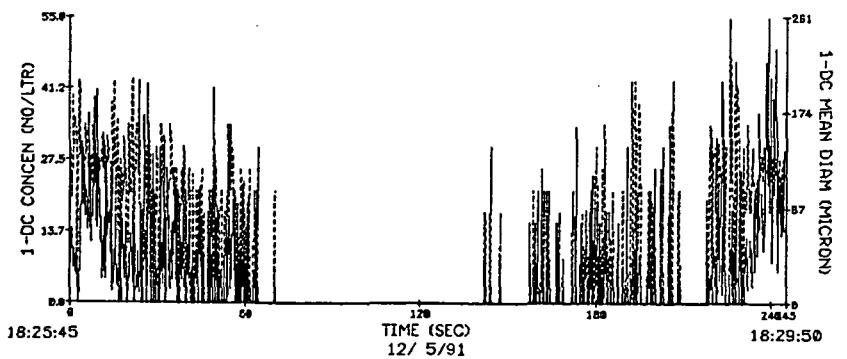
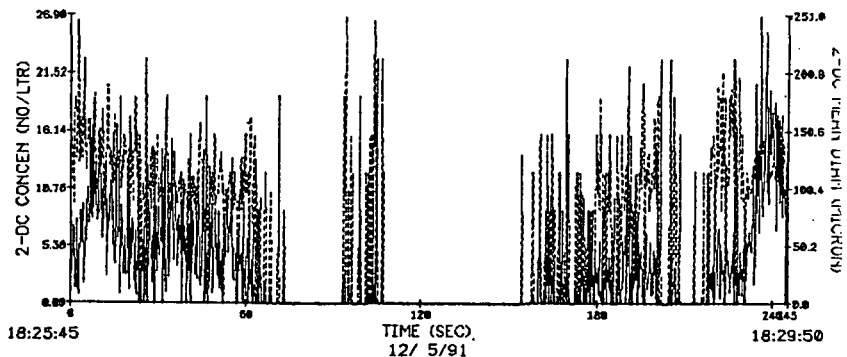
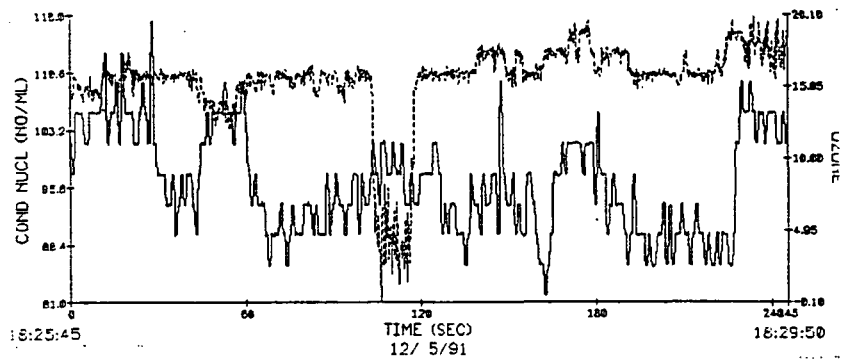
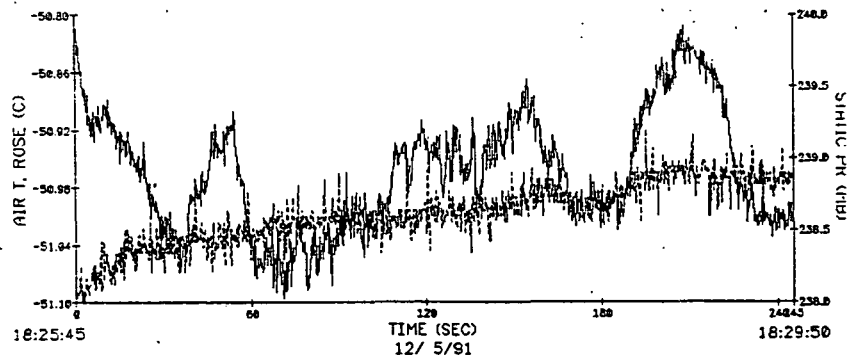
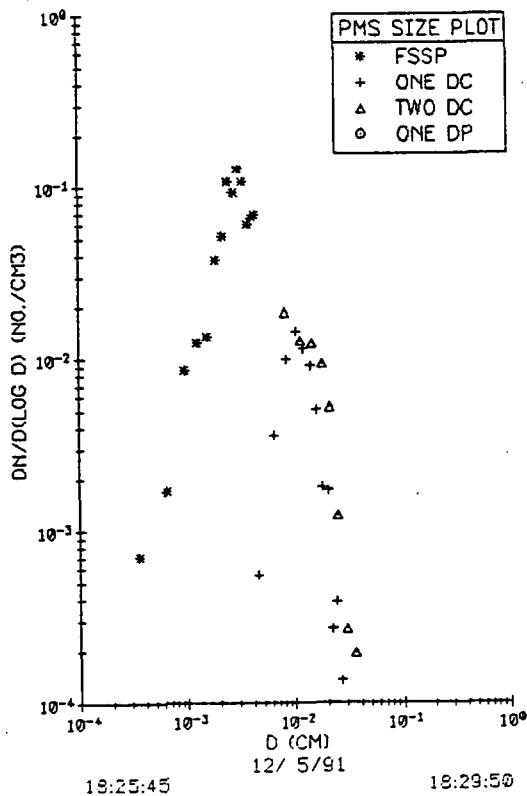
Wind Direction: 280.9 °

Wind Velocity: 61.28 m/sec

Pressure: 238.62 mb

Pressure Altitude: 10901.6 m

Aircraft Heading: 45.1 °



12/05/91 18:29:37.9943 18:29:39.2537 DeltaT: 0: 1.2594 TAS1 = 131.4 TAS2 = 131.2

1 mm

12/05/91

18:33:45-18:39:21

Leg # 3a

Averages:

Temperature: -53.7 °C

Dew Point: -55.2 °C

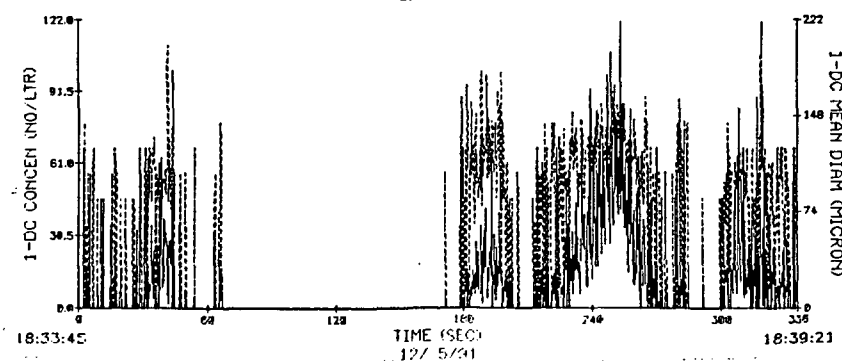
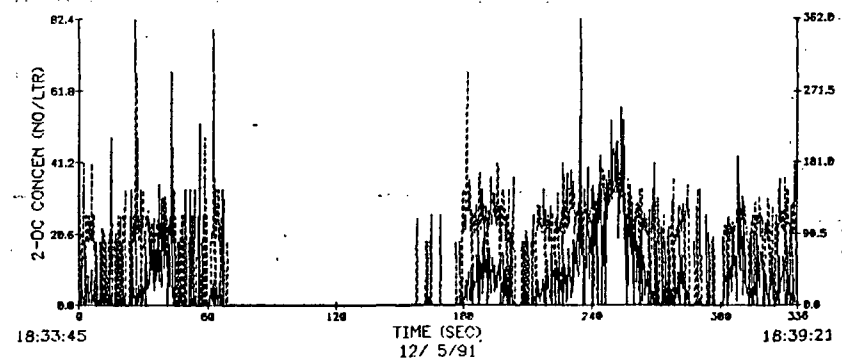
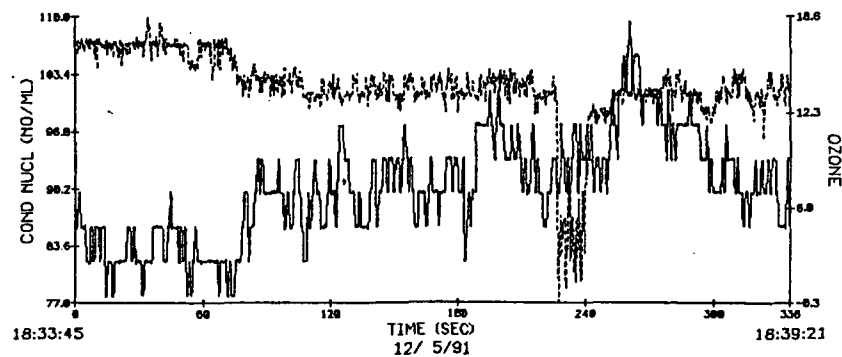
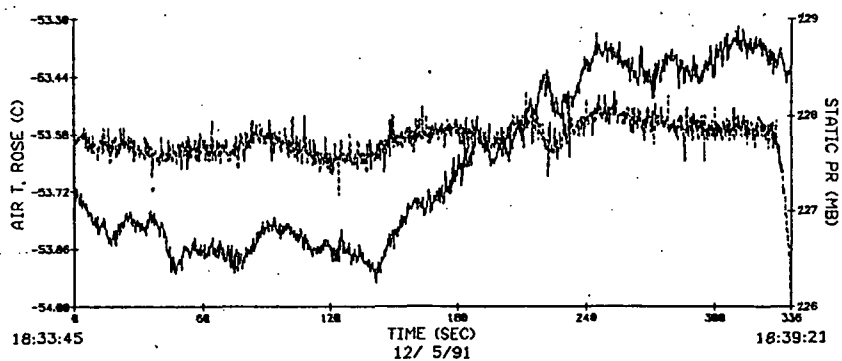
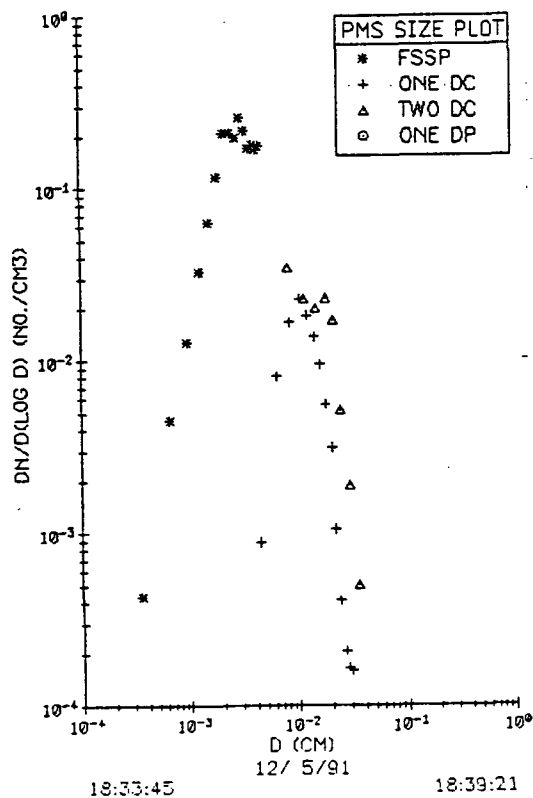
Wind Direction: 279.7 °

Wind Velocity: 63.46 m/sec

Pressure: 227.66 mb

Pressure Altitude: 11201.5 m

Aircraft Heading: 263.1 °



12/05/91 18:37:52.5601 18:37:52.8599 DeltaT: 0: 0.2998 TAS1 = 136.4 TAS2 = 136.4

1 mm

12/05/91

18:39:31-18:47:40

Leg # 3b

Averages:

Temperature: -56.0 °C

Dew Point: -57.0 °C

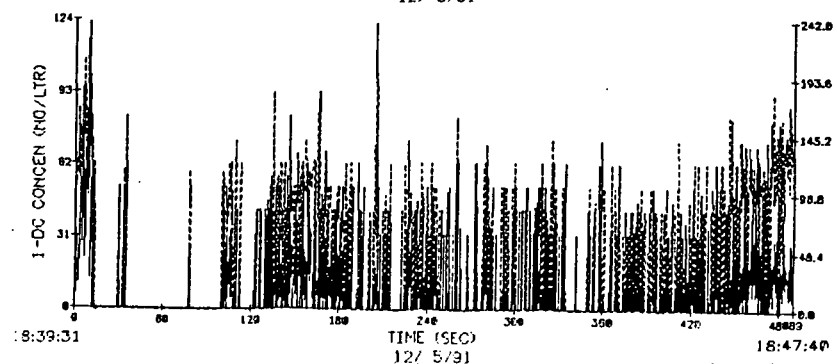
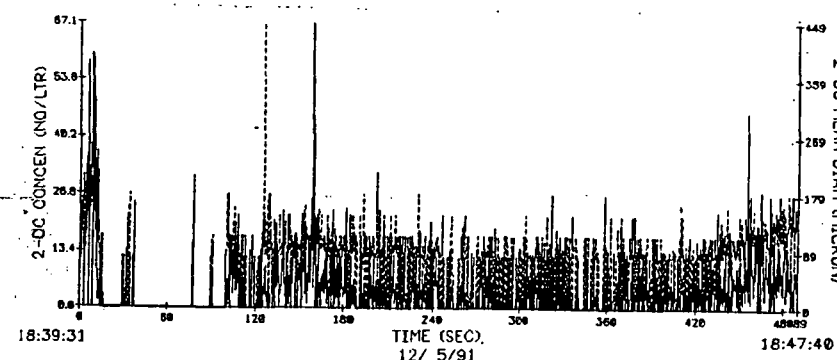
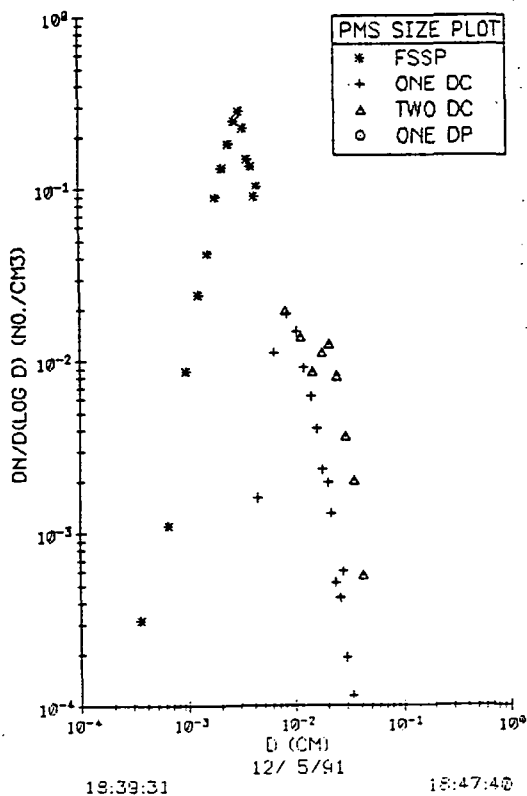
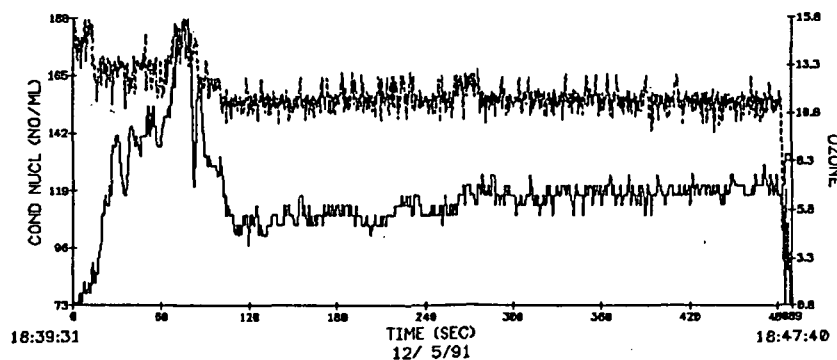
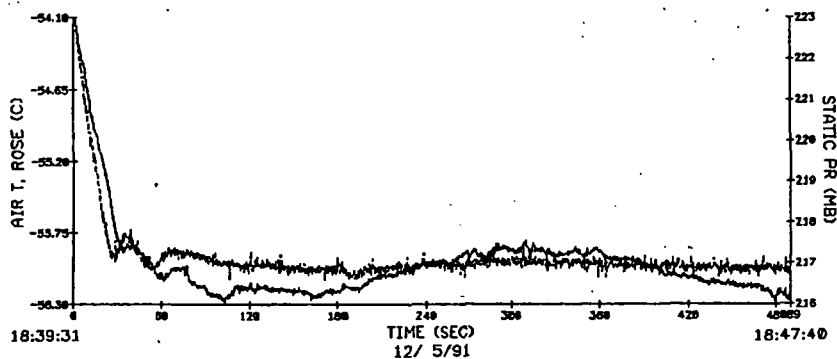
Wind Direction: 279.7 °

Wind Velocity: 63.00 m/sec

Pressure: 217.13 mb

Pressure Altitude: 11500.8 m

Aircraft Heading: 258.2 °



12/05/91 18:38:02.7989

18:38:03.4296

DeltaT: 0: 0.6307

TAS1 = 135.6

TAS2 = 135.6

1 mm

C-3.

12/05/91

18:53:00-18:54:01

Leg # 4a

Averages:

Temperature: -59.0 °C

Dew Point: -60.1 °C

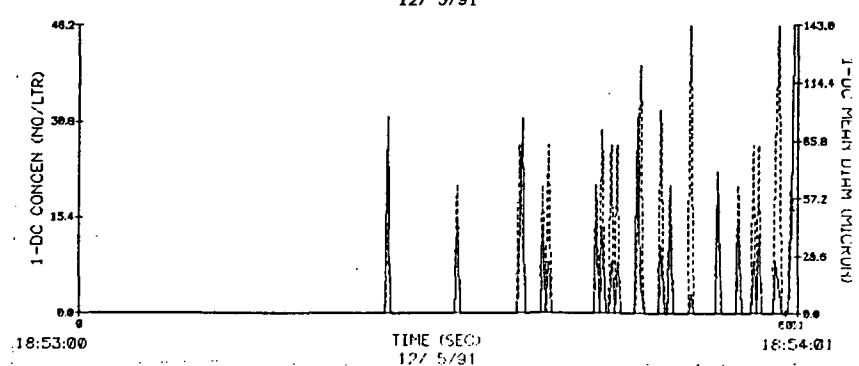
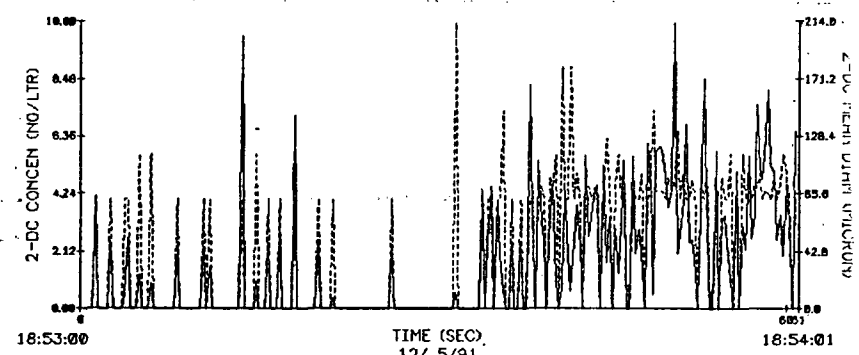
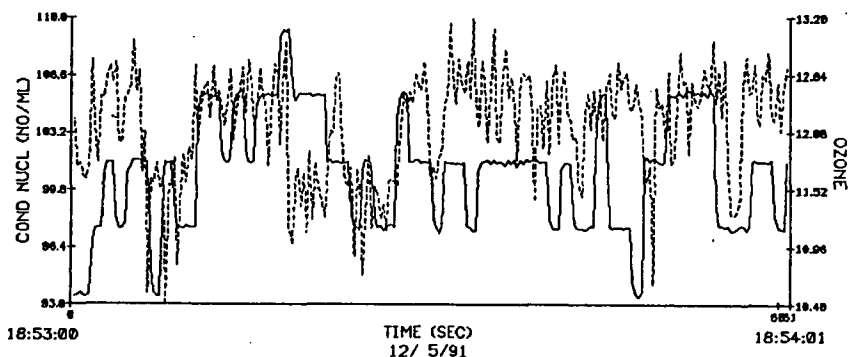
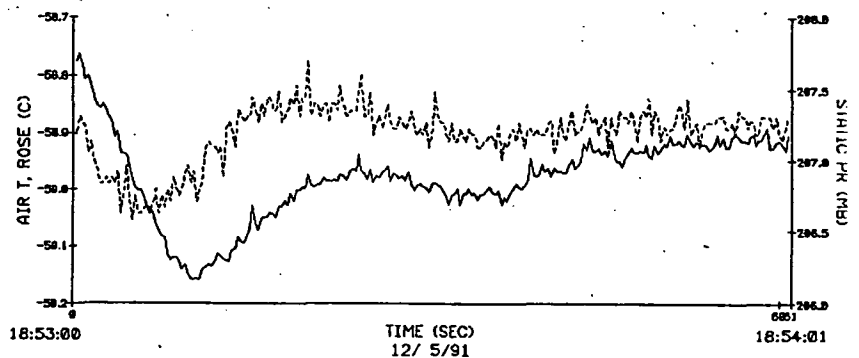
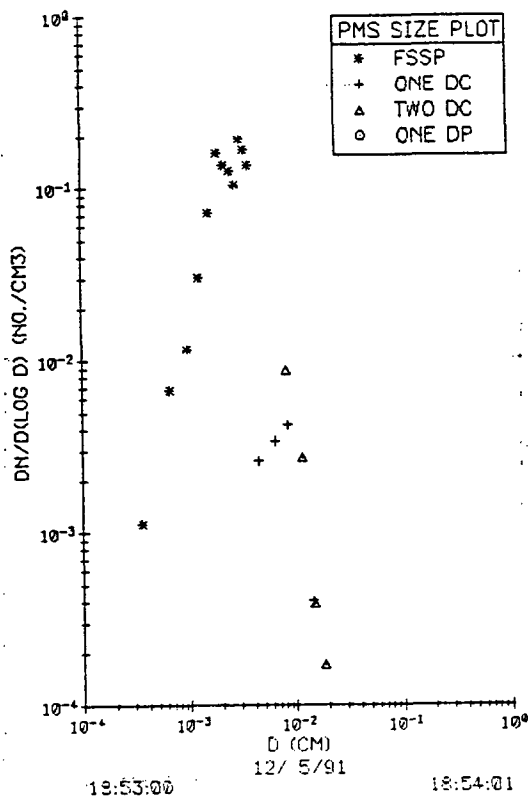
Wind Direction: 279.2 °

Wind Velocity: 61.58 m/sec

Pressure: 207.17 mb

Pressure Altitude: 11794.8 m

Aircraft Heading: 43.6 °



12/05/91 18:54:00.9106 18:54:01.6523 DeltaT: 0: 1.1417 TAS1 = 145.0 TAS2 = 144.9

1 mm

12/05/91

18:54:51-18:56:30

Leg # 4b

Averages:

Temperature: -61.5 °C

Dew Point: Not Available

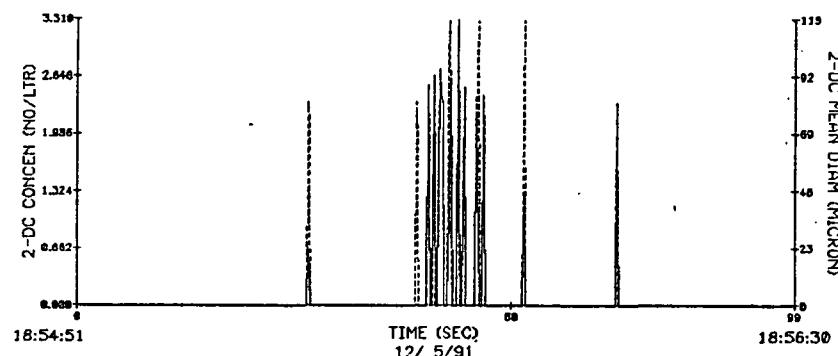
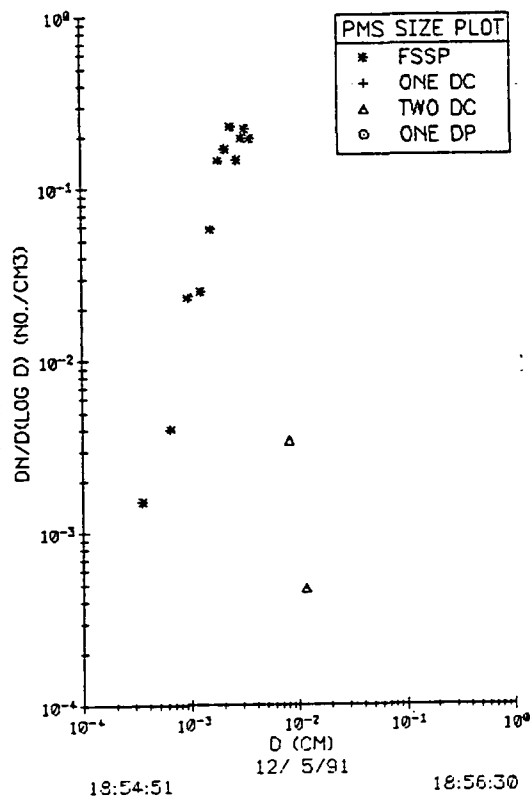
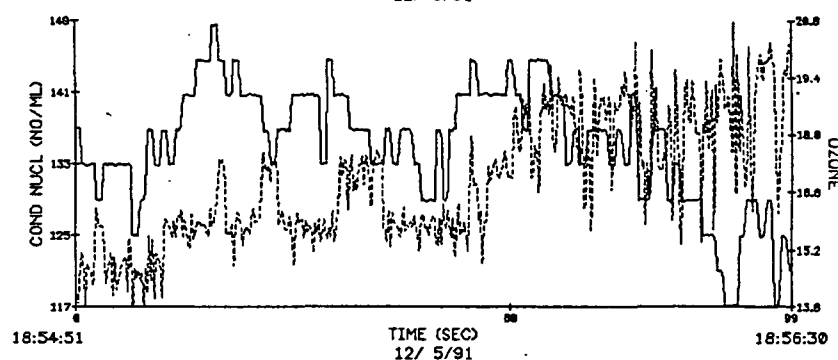
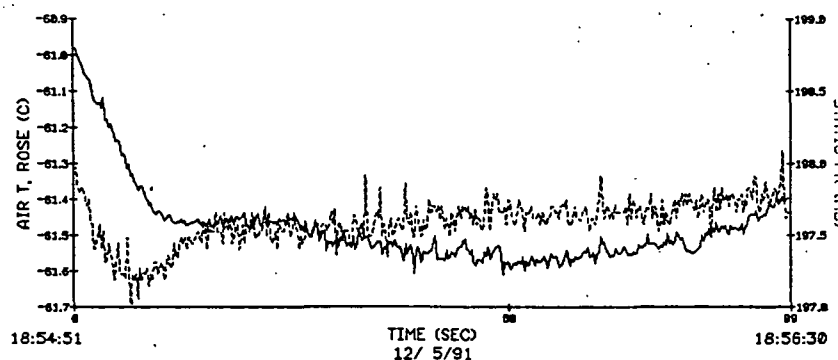
Wind Direction: 270.0 °

Wind Velocity: 61.88 m/sec

Pressure: 190.61 mb

Pressure Altitude: 12088.1 m

Aircraft Heading: 44.9 °



18:55:45.2907 18:55:48.6061 DeltaT: 0: 3.3154 TAS1 = 139.9 TAS2 = 139.9

1 mm

12/05/91

19:02:00-19:05:31

Leg # 5a

Averages:

Temperature: -63.5 °C

Dew Point: Not Available

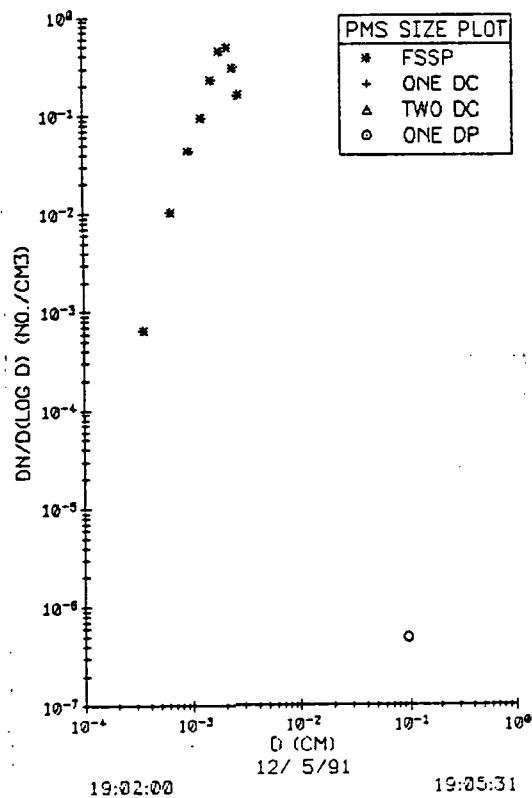
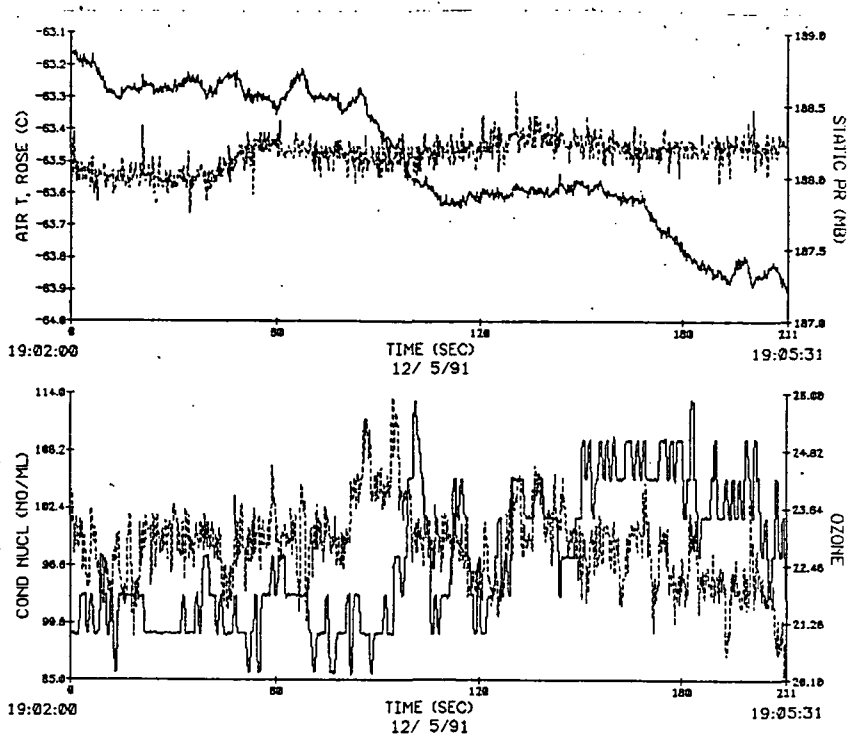
Wind Direction: 278.7 °

Wind Velocity: 64.37 m/sec

Pressure: 188.16 mb

Pressure Altitude: 12389.4 m

Aircraft Heading: 250.8 °



No 2-DC DATA

12/05/91

19:06:41-19:14:00

Leg # 5b

Averages:

Temperature: -64.4 °C

Dew Point: Not Available

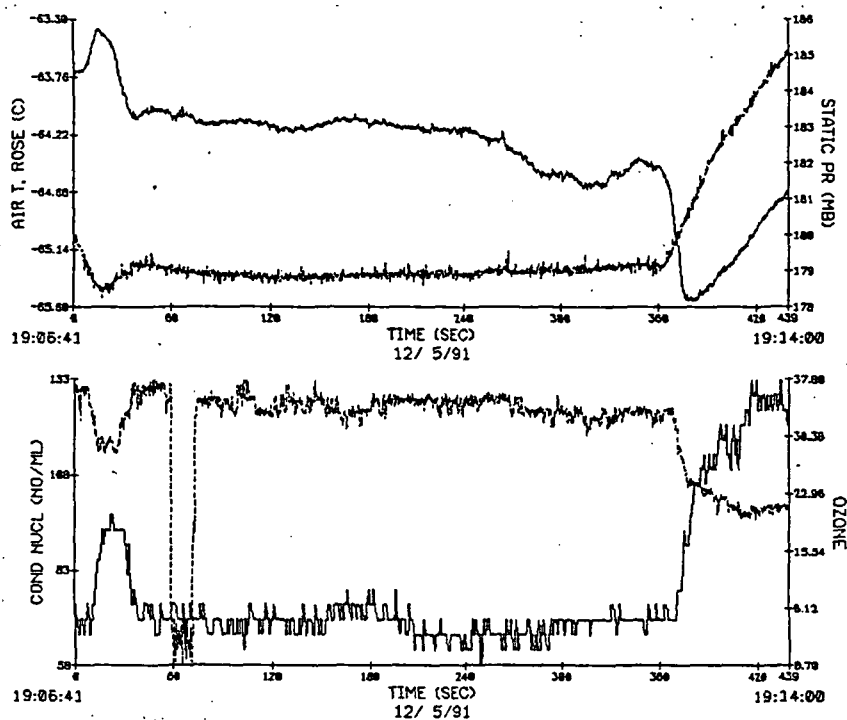
Wind Direction: 280.8 °

Wind Velocity: 60.01 m/sec

Pressure: 179.02 mb

Pressure Altitude: 12669.2 m

Aircraft Heading: 256.7 °



No Cloud

12/05/91

19:18:30-19:22:45

Leg # 6

Averages:

Temperature: -62.5 °C

Dew Point: Not Available

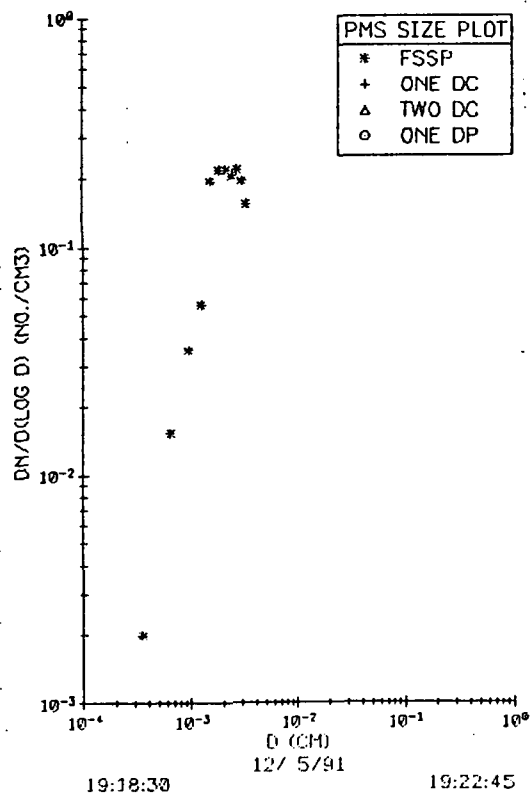
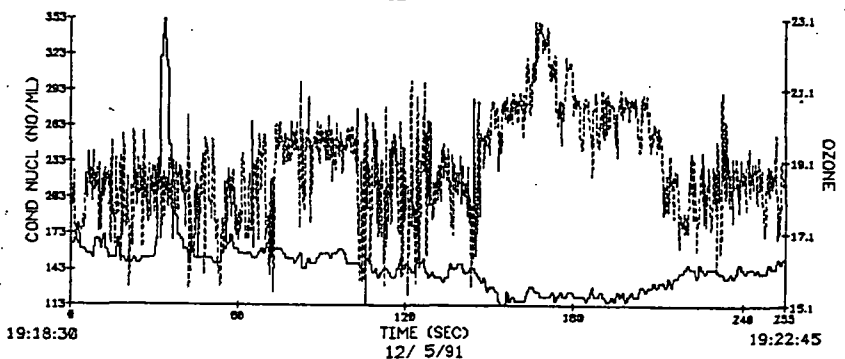
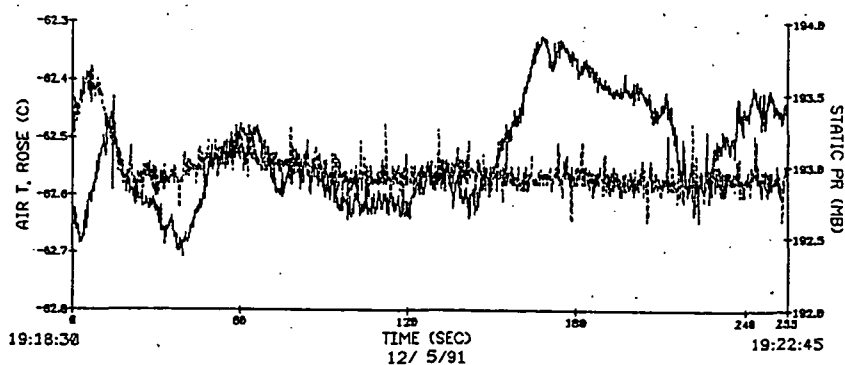
Wind Direction: 281.0 °

Wind Velocity: 62.51 m/sec

Pressure: 192.98 mb

Pressure Altitude: 12234.4 m

Aircraft Heading: 43.3 °



12/05/91

19:29:00-19:41:00

Leg # 7

Averages:

Temperature: -56.2 °C

Dew Point: -57.4 °C

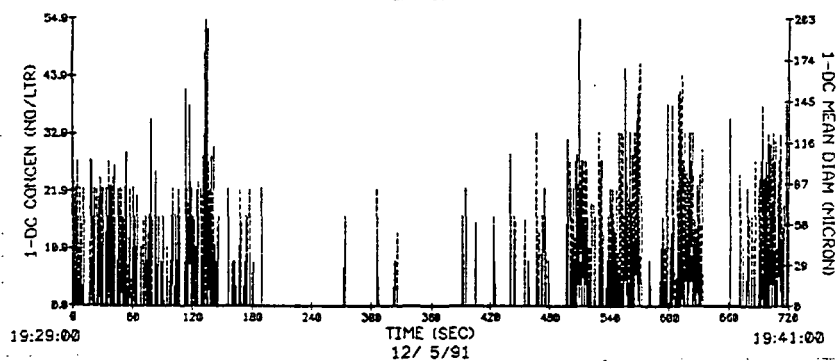
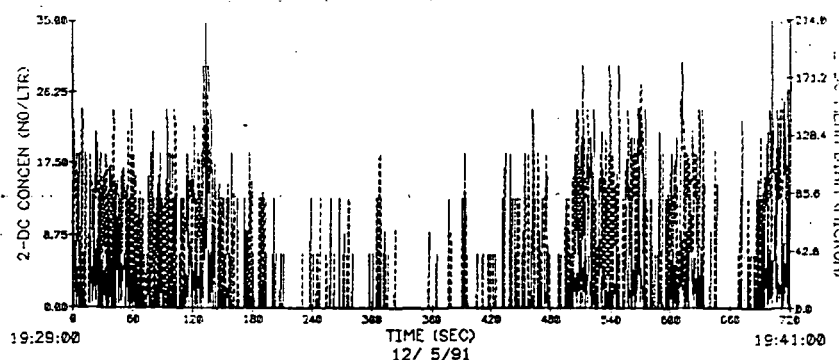
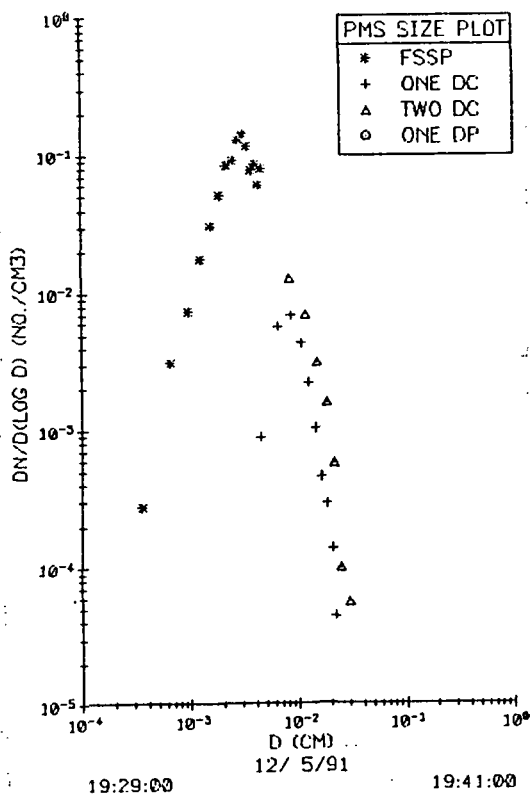
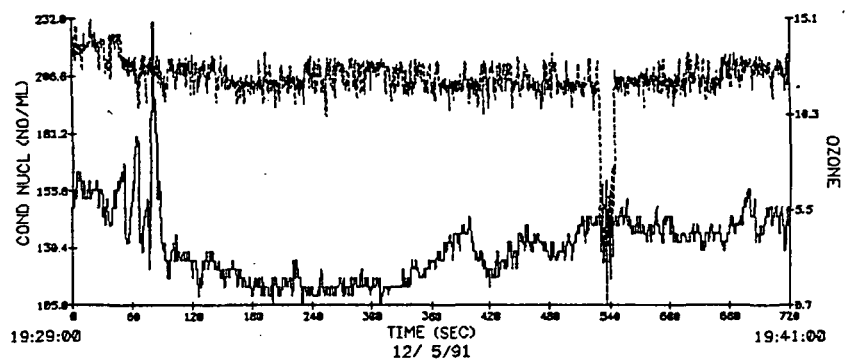
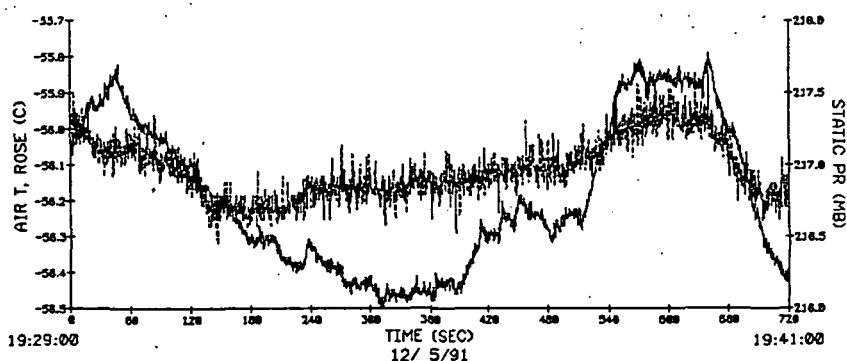
Wind Direction: 277.3 °

Wind Velocity: 64.86 m/sec

Pressure: 192.98 mb

Pressure Altitude: 11505.4 m

Aircraft Heading: 256.0 °



12/05/91

19:40:56.1373

19:40:57.3600

DeltaT: 0: 1.2227

TAS1 = 139.6

TAS2 = 140.0

1 mm

12/05/91

19:44:50-19:49:25

Leg # 8

Averages:

Temperature: -50.8 °C

Dew Point: -52.2 °C

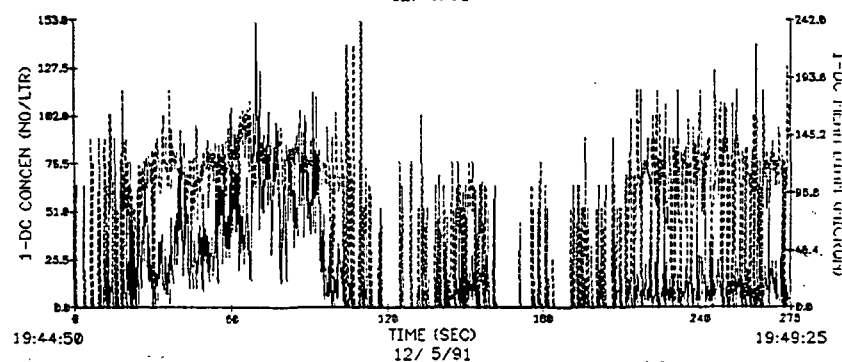
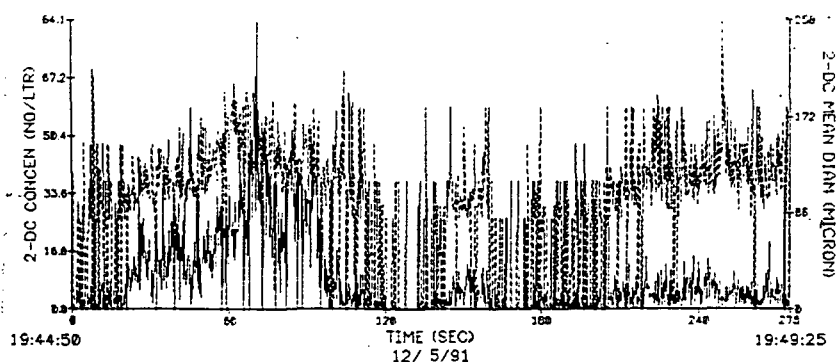
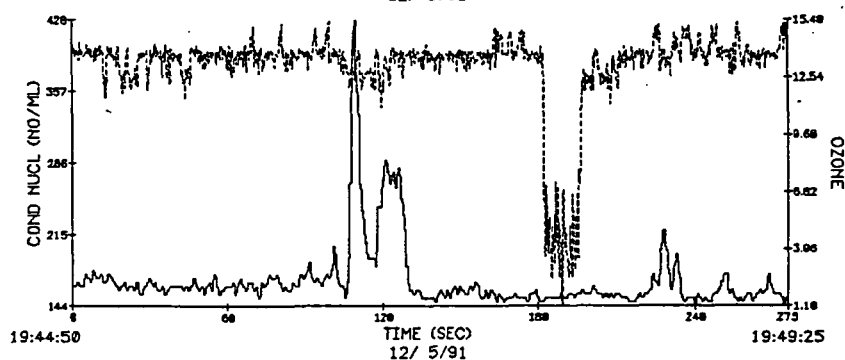
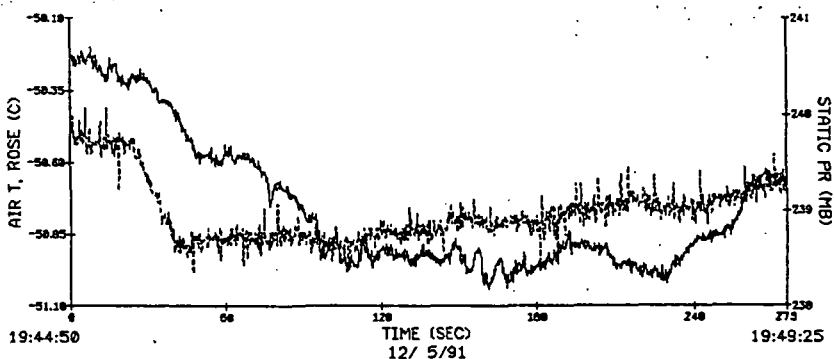
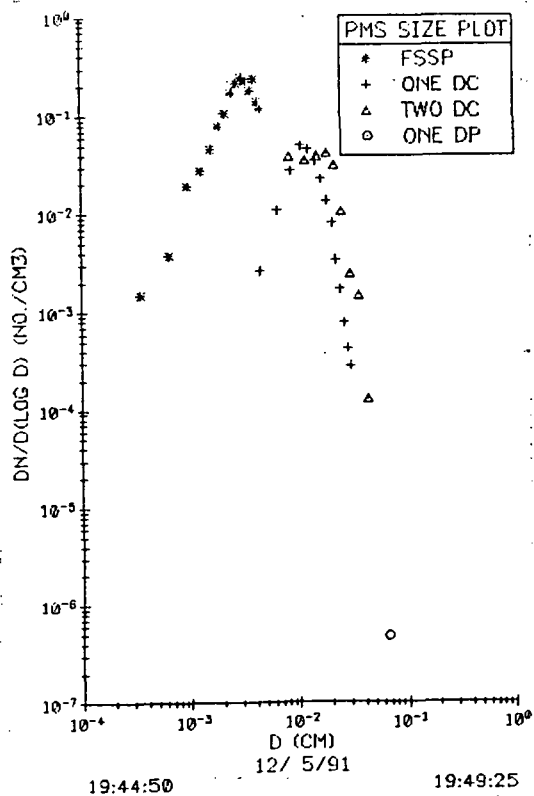
Wind Direction: 279.4 °

Wind Velocity: 61.63 m/sec

Pressure: 238.98 mb

Pressure Altitude: 10892.0 m

Aircraft Heading: 43.3 °



12/05/91

19:46:03.7561

19:46:04.0253

DeltaT: 0: 0.2692

TAS1 = 121.9

TAS2 = 121.9

1 mm

12/05/91

19:53:00-20:06:00

Leg # 9

Averages:

Temperature: -46.2 °C

Dew Point: -47.4 °C

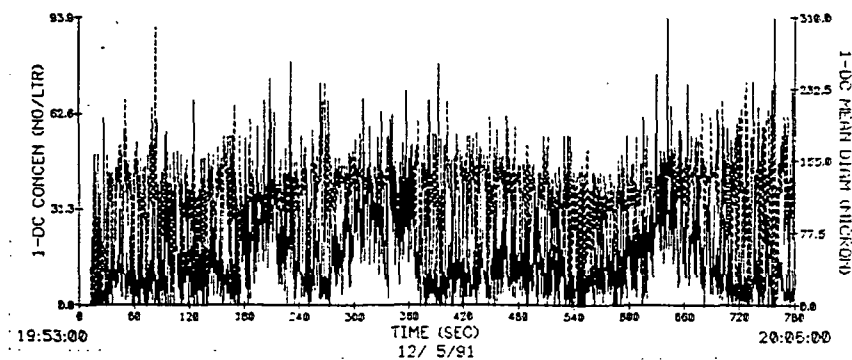
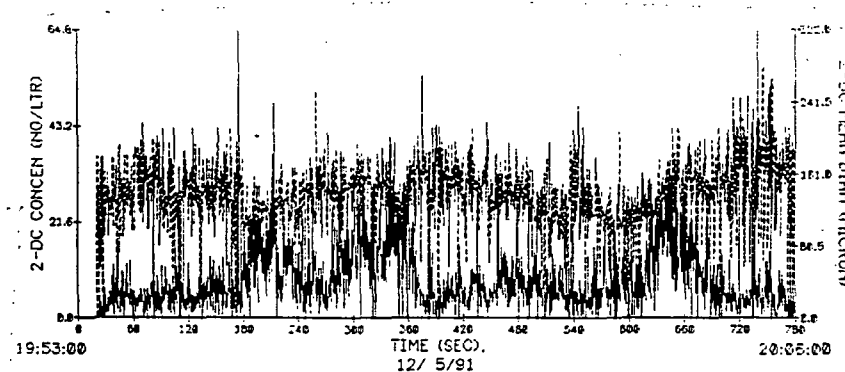
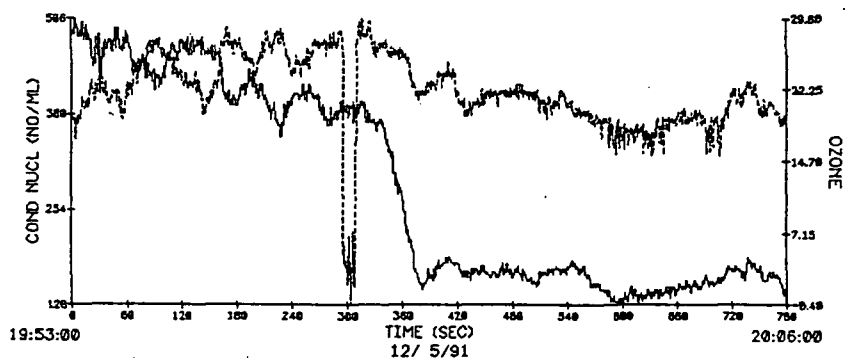
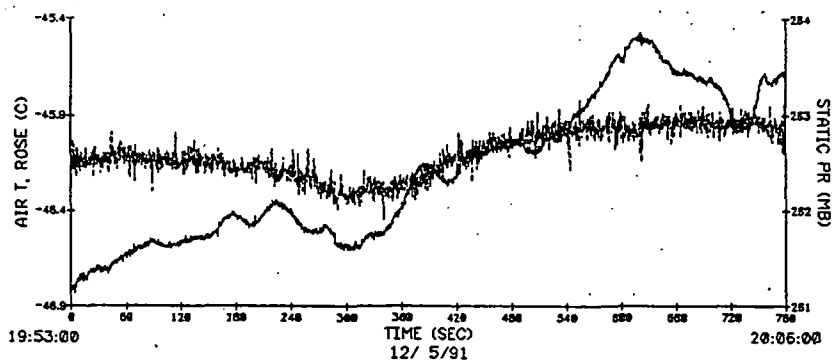
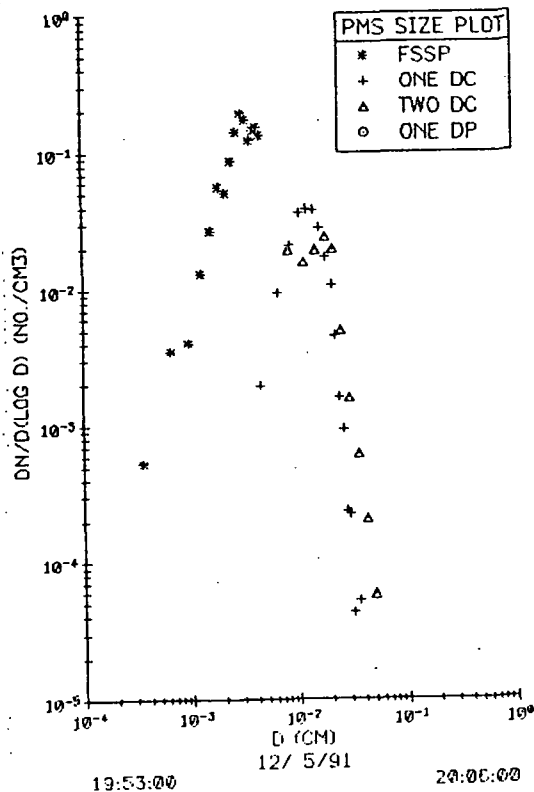
Wind Direction: 281.3 °

Wind Velocity: 56.39 m/sec

Pressure: 262.61 mb

Pressure Altitude: 10882.4 m

Aircraft Heading: 259.3 °



12/05/91

20:03:46.7389

20:03:47.4712

DeltaT: 0: 0.7323

TAS1 = 123.4

TAS2 = 123.5

1 mm

12/07/91

20:15:45-20:22:59

Leg # 1a

Averages:

Temperature: -45.1 °C

Dew Point: Not Available

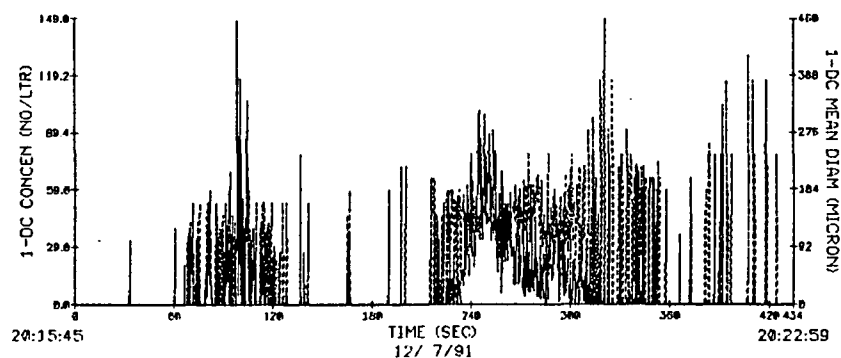
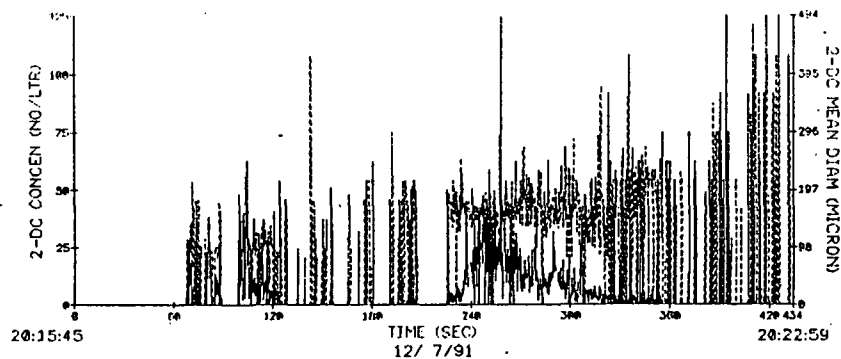
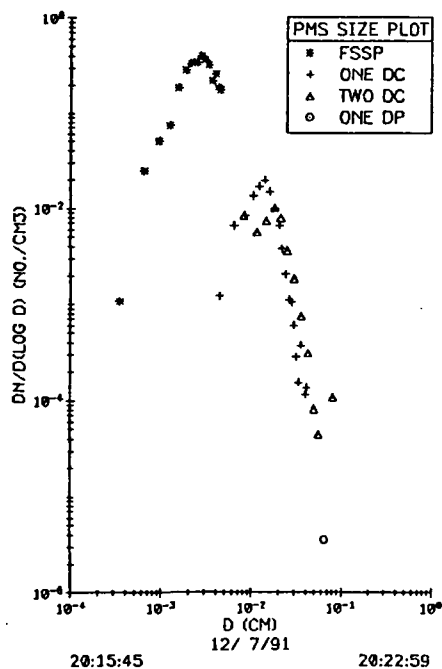
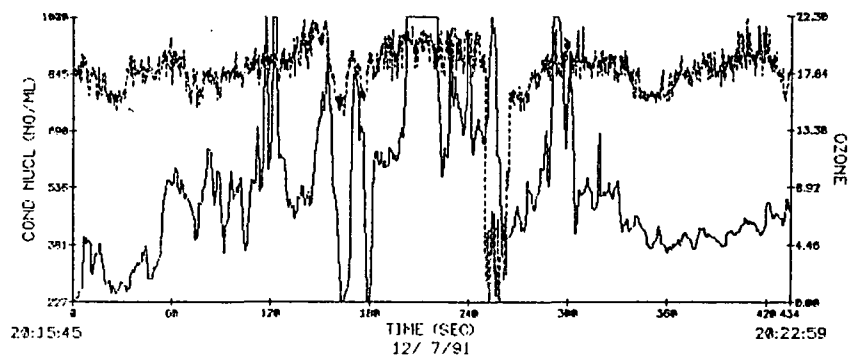
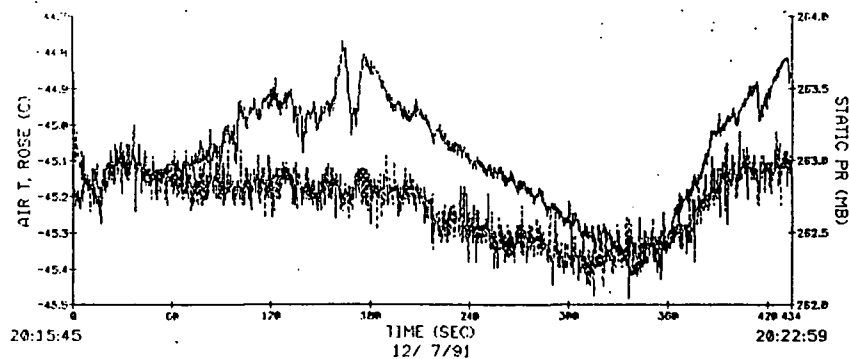
Wind Direction: 228.5 °

Wind Velocity: 26.01 m/sec

Pressure: 262.70 mb

Pressure Altitude: 10040.2 m

Aircraft Heading: 104.0 °



12/07/91 20:20:08.3226 20:20:08.7262 DeltaT: 0: 0.4036 TAS1 = 129.8 TAS2 = 129.8

1 mm

12/07/91

20:24:59-20:28:00

Leg # 1b

Averages:

Temperature: °C

Dew Point: °C

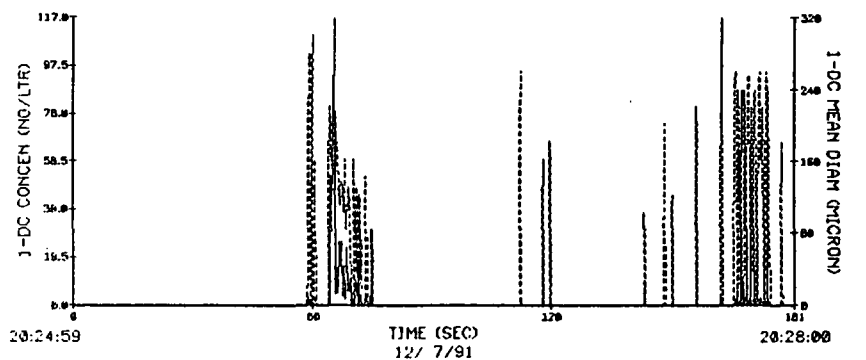
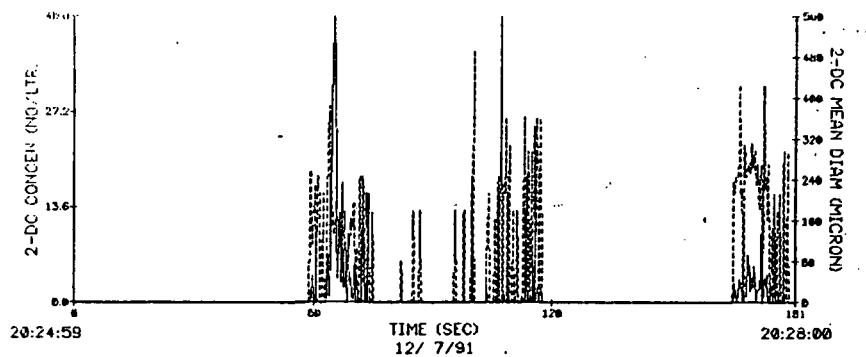
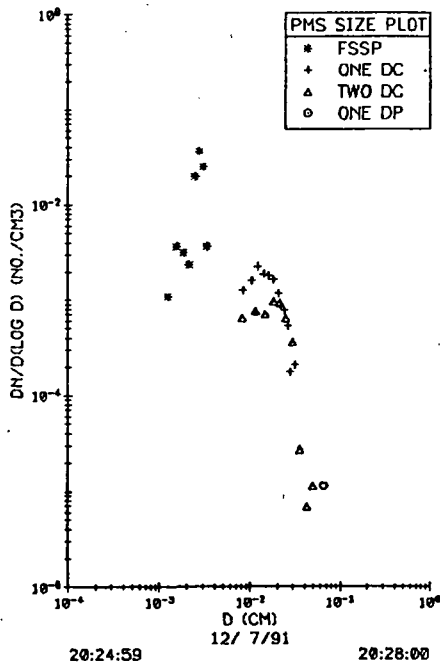
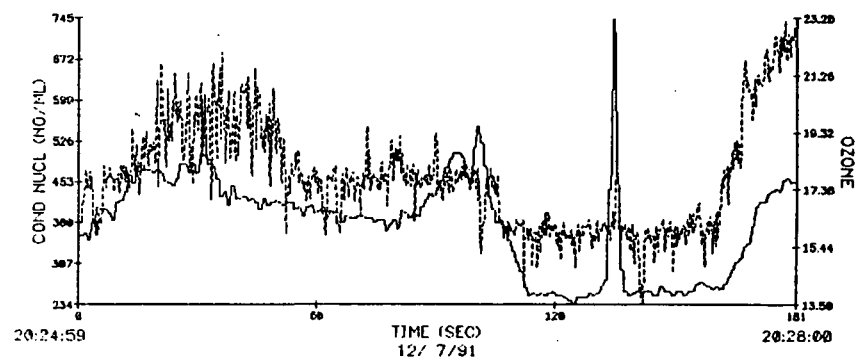
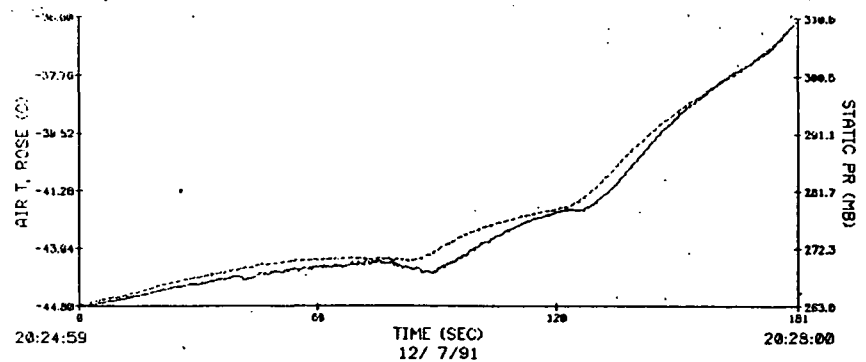
Wind Direction: °

Wind Velocity: m/sec

Pressure: mb

Pressure Altitude: m

Aircraft Heading: °



12/07/91 20:26:04.0701 20:26:04.3823 DeltaT: 0: 0.3122 TAS1 = 143.1 TAS2 = 143.1

1 mm

12/07/91

20:32:00-20:48:40

Leg # 2

Averages:

Temperature: -35.0 °C

Dew Point: Not Available

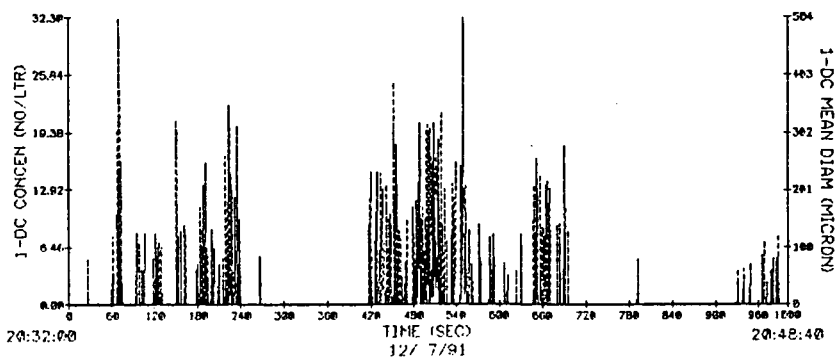
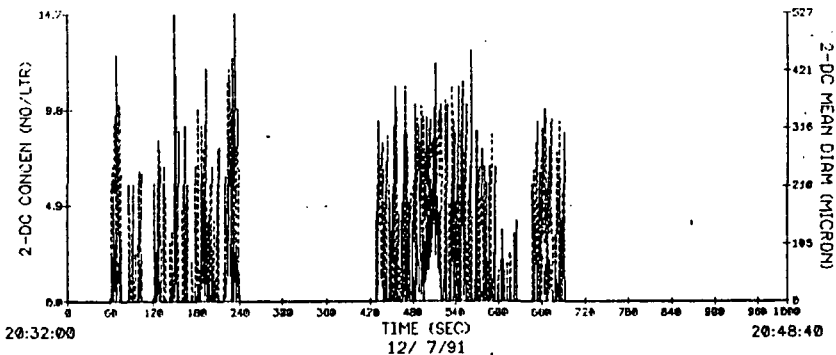
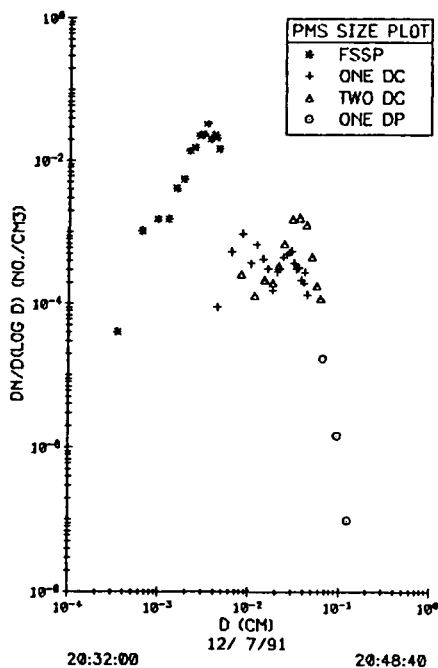
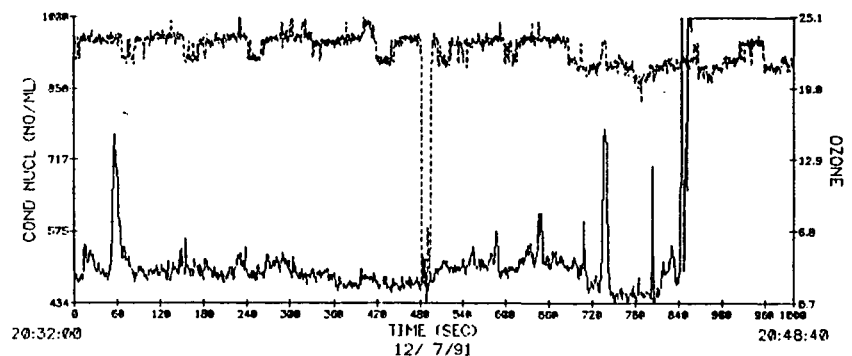
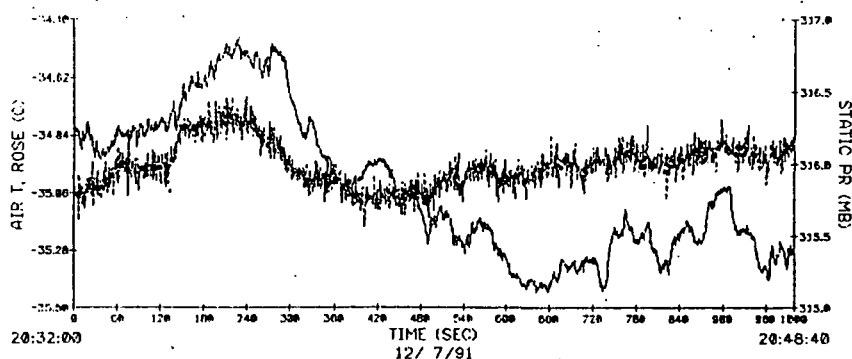
Wind Direction: 237.6 °

Wind Velocity: 25.31 m/sec

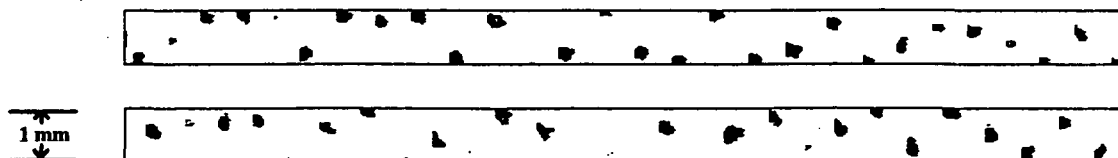
Pressure: 316.0 mb

Pressure Altitude: 8814.0 m

Aircraft Heading: 269.1 °



12/07/91 20:41:10.3354 20:41:11.4021 DeltaT: 0: 1.0667 TAS1 = 130.1 TAS2 = 130.4



12/07/91

20:51:00-21:04:45

Leg # 3

Averages:

Temperature: -34.8 °C

Dew Point: -34.4 °C

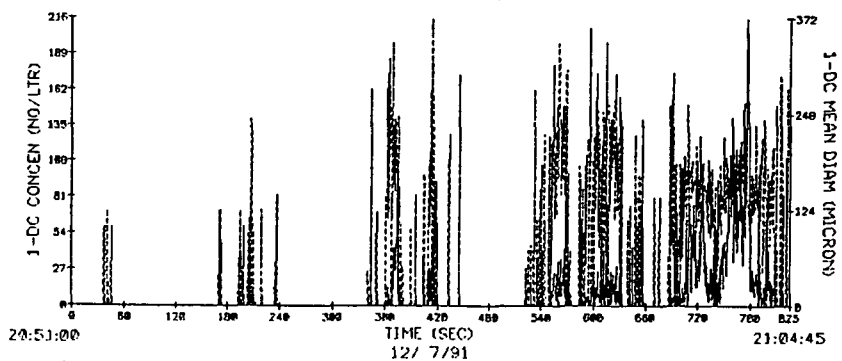
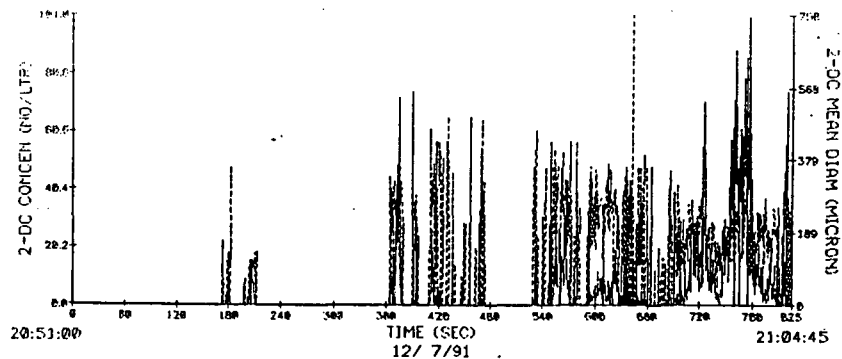
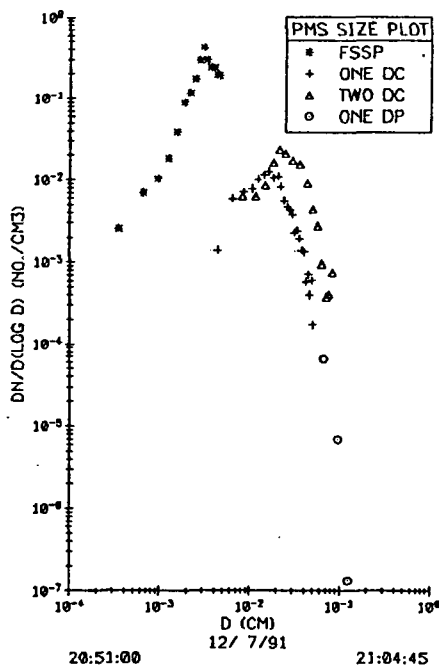
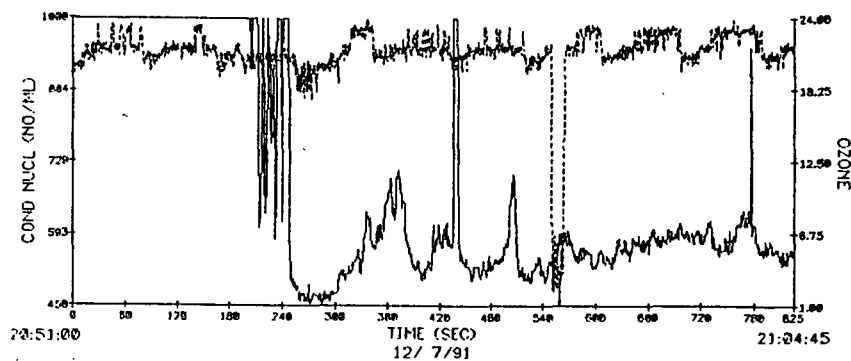
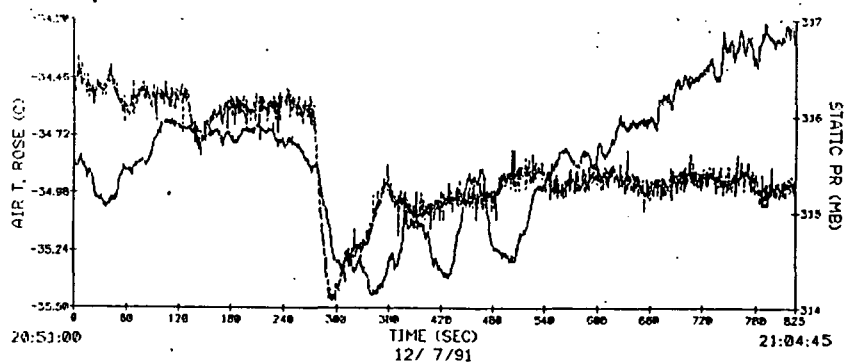
Wind Direction: 238.0 °

Wind Velocity: 24.04 m/sec

Pressure: 315.50 mb

Pressure Altitude: 8824.6 m

Aircraft Heading: 104.3 °



12/07/91 21:02:57.1973 21:02:57.6133 DeltaT: 0: 0.4160 TAS1 = 115.0 TAS2 = 115.0

1 mm

12/07/91

21:07:50-21:26:05

Leg # 4

Averages:

Temperature: -39.7 °C

Dew Point: Not Available

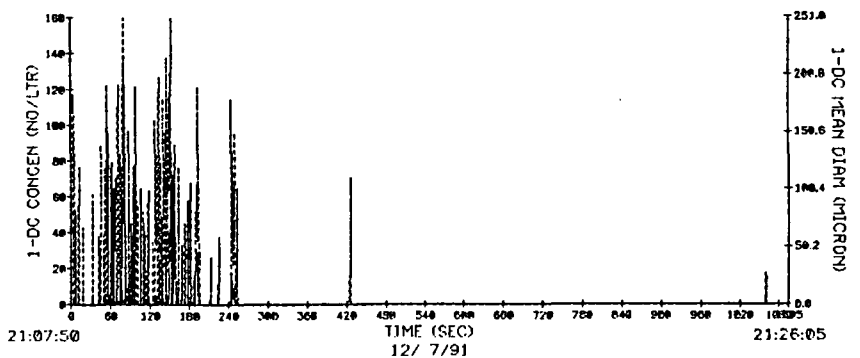
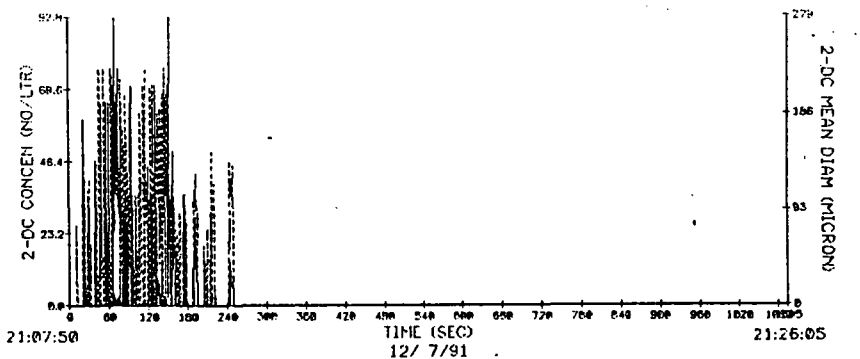
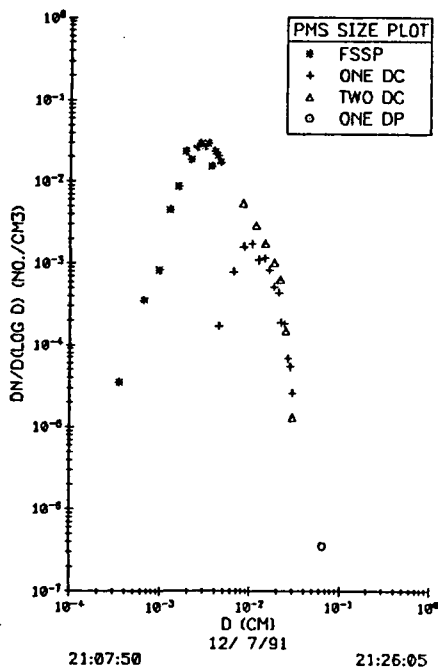
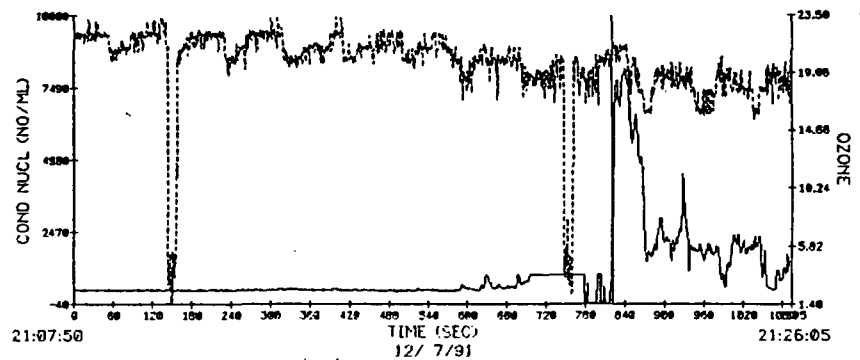
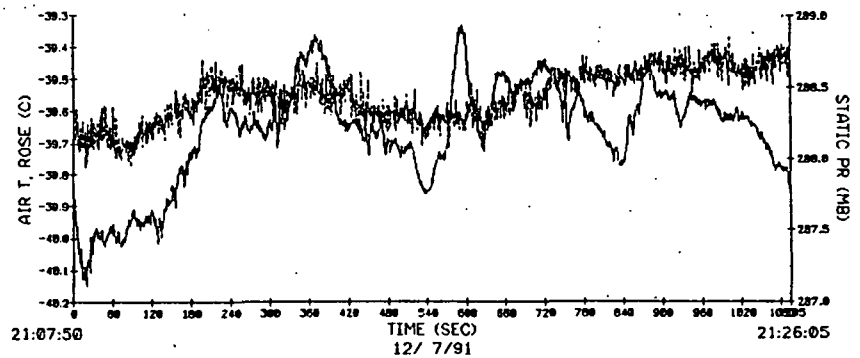
Wind Direction: 229.7 °

Wind Velocity: 20.39 m/sec

Pressure: 288.4 mb

Pressure Altitude: 9425.1 m

Aircraft Heading: 267.7 °



12/07/91 21:09:34.9410 21:09:57.9227 DeltaT: 0:22.9817 TAS1 = 128.3 TAS2 = 128.2

